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3.0 BASELINE DATA FOR CHARTER IFQ ANALYSIS

The following section is excerpted and updated from the EA/RIR/RFA for a Regulatory Amendment to Implement Management Measures under a Guideline Harvest Level And/or Moratorium for Pacific Halibut in Areas 2C and 3A (NPFMC 2000). This section provides baseline halibut data from the IPHC stock assessment and descriptions of halibut harvests and participation by fishery sector and area prepared annually by the NMFS RAM Division and State CFEC that are used in Section 4 to prepare the RIR. The following represents the status of the halibut stock as presented by IPHC staff at the annual IPHC meeting in January 2001. The results of the IPHC Annual Meeting in January 2001 will be incorporated into the public review draft prior to final action scheduled for April 2001. Also, the status of the 2000 commercial halibut IFQ program will be incorporated into the public review draft after publication of the 2001 Report to the Fleet by the RAM Division in February 2001.

As reported by Bingham (2000) at the December 2000 Council meeting, corrections to programming code and revision of procedures related to correction for non-response bias resulted in corrected estimates associated with the Alaska Department of Fish and Game-Division of Sport Fish's annual mail survey of recreational anglers. Additionally, earlier estimates for 1999 harvests were only interim projected values used during the GHL analysis, and are replaced herein with the estimated values from the SWHS. The corrected estimates of Pacific halibut harvest by anglers fishing in IPHC area 2C were substantially larger for 1996 and 1997, for both chartered and private anglers. Comparatively, the corrected estimates were moderately smaller for 1998 and 1999 for anglers fishing in area 2C. Corrected estimates indicate a relatively stable level of harvest by chartered anglers for area 2C in terms of numbers of fish during the years of 1996-1999. Corrected estimates for Pacific halibut harvest by recreational anglers fishing in IPHC 3A were moderately smaller than previous estimates, for both chartered and private anglers. Corrected estimates indicate a declining level of harvest by chartered anglers in this area, at least for the years of 1997-1999. The corrected data is incorporated into this analysis, as recommended by the Council's Scientific and Statistical Committee (SSC).

3.1 Biology and total removals of Pacific halibut in Areas 2C and 3A

3.1.1 Method of Areas 2C and 3A commercial quota calculation (from Clark and Parma 1998, 1999 and Clark and Hare 2000)

The halibut resource is healthy and total removals were at record levels in 1999, which ranked in the top five highest years at over 98 M lb. Record high sport fisheries occurred in 1998 and commercial fisheries in 1999. The 1998 and 1999 total removals of halibut off the Pacific coast for all areas by commercial catch, sport harvest, bycatch mortality, personal use and wastage that were used by the IPHC in its stock assessment are presented in Figure 3.1. Table 3.1 contains the estimates of removals in 2000 and IPHC staff recommendations for commercial halibut quotas for 2001.

Each year the IPHC staff assesses the abundance and potential yield of Pacific halibut using all available data from the commercial fishery and scientific surveys. The exploitable biomass (yield) is estimated to set quotas for ten regulatory areas by fitting a detailed population model to the data from that area (Figure 3.2). A biological target level for total removals is then calculated by multiplying a fixed harvest rate—presently 20%—to the estimate of exploitable biomass. This target level is called the “constant exploitation yield” or CEY for that area in the coming year. The CEY therefore changes annually in proportion to the exploitable biomass. Each CEY represents the total allowable harvest (in net lb) for that area, which cannot be exceeded. The IPHC then estimates the sport and personal use/subsistence harvests and wastage and bycatch mortalities for each area. These are subtracted from the CEY and the remainder may be set as the

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catch quota for each area's directed commercial setline (longline) fishery. Staff recommendations for quotas in each area are based on the estimates of setline CEY but may be higher or lower depending on a number of statistical, biological, and policy considerations. Similarly, the IPHC's final quota decisions are based on the staff's recommendations but may be adjusted due to conservation considerations (Table 3.1).

Table 3.1. Removals in 2000 and staff recommendations for 2001 CEYs (millions of net pounds).

	WA			BC		ALASKA				
Area	2A	2B	2C	3A	3B	4A	4B	4CDE	Total	
2000 catch limit	0.83 ¹	10.60	8.40	18.31	15.03	4.97	4.91	4.45	67.50	
2000 commercial landings	0.46	10.72	8.46	19.33	15.44	5.04	4.71	4.04	68.20	
Other removals										
Sport catch	0.34	1.58	1.98	4.60	0.02	0.10	—	—	8.62	
Legal-sized bycatch	0.34	0.14	0.23	1.21	0.58	0.52	0.20	2.55	5.77	
Personal use	0.00	0.30	0.17	0.07	0.02	0.09	0.00	0.08	0.73	
Legal-sized wastage	0.01	0.03	0.04	0.03	0.05	0.03	0.03	0.03	0.25	
Total other removals	0.69	2.05	2.42	5.91	0.67	0.74	0.23	2.66	15.37	
Total removals	1.15	12.77	10.88	25.24	16.11	5.78	4.94	6.70	83.57	
2001 exploitable biomass	7.44	60.18	56.00	139.00	130.66	52.82	51.43	51.43	548.96	
2001 total CEY	1.49	12.04	11.20	27.80	26.13	10.56	10.29	10.29	109.80	
2001 setline CEY	1.14 ¹	9.99 ²	8.78	21.89	25.46	9.82	10.06	7.63	94.77	

¹ Catch limit and setline CEY include sport catch in Area 2A only.

² With the lower series of 2B sport catch estimates (including 0.887 M lb in recent years), 2AB exploitable biomass is 66.71 instead of 67.62 as in the table. With 11% of the total in 2A, this change results in a 2001 setline CEY of 1.12 M lb in 2A and 10.51 M lb in 2B.

From 1982 through 1994, stock size was estimated by fitting an age-structured model (CAGEAN) to commercial catch-at-age and catch-per-effort data. In the early 1990s it became apparent that age-specific selectivity in the commercial fishery had shifted as a result of a decline in halibut growth rates, which was more dramatic in Alaska than in Canada. An age- and length-structured model was developed and implemented in 1995 that accounted for the change in growth. It also incorporated survey (as well as commercial) catch-at-age and catch-per-effort data. The survey data contain much more information on younger fish, many of which are now smaller than the commercial size limit, and are standardized to provide a consistent index of relative abundance over time and among areas.

At first the model was fitted on the assumption that survey catchability and length-specific survey selectivity were constant, while commercial catchability and selectivity were allowed to vary over time (subject to some restraints). The resulting fits showed quite different length-specific survey selectivities in Area 2B and 3A, however, which suggested that age could still be influencing selectivity. To reflect that possibility, the new model has been fitted in two ways since 1996: by requiring constant length-specific survey selectivity (as in 1995), and by requiring constant age-specific survey selectivity. The age-specific fits generally produce lower estimates of recent recruitment and therefore present abundance, and to be conservative the staff has used those estimates to calculate CEY's.

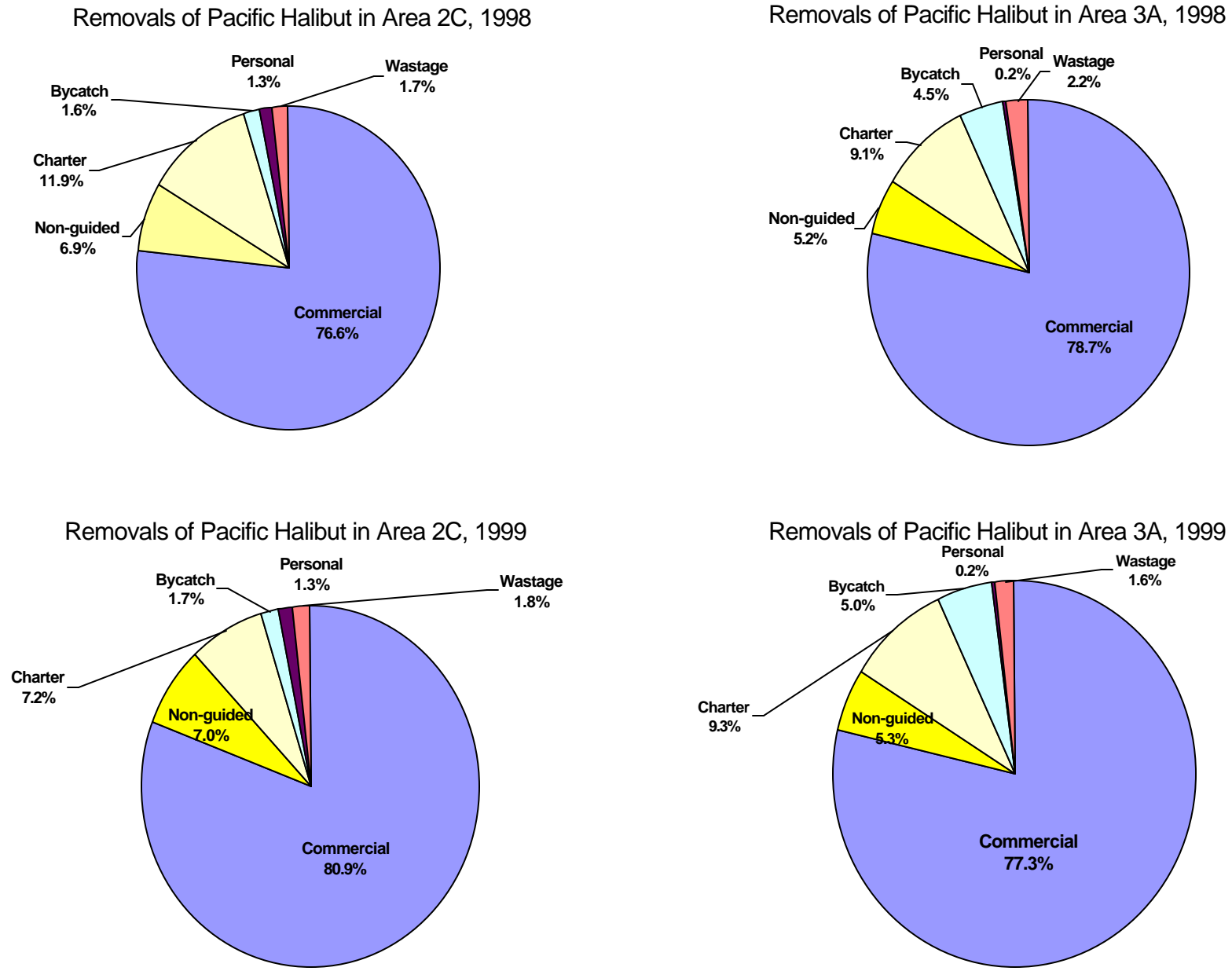


Figure 3.1. Pacific halibut removals by sector in 1998 and 1999.

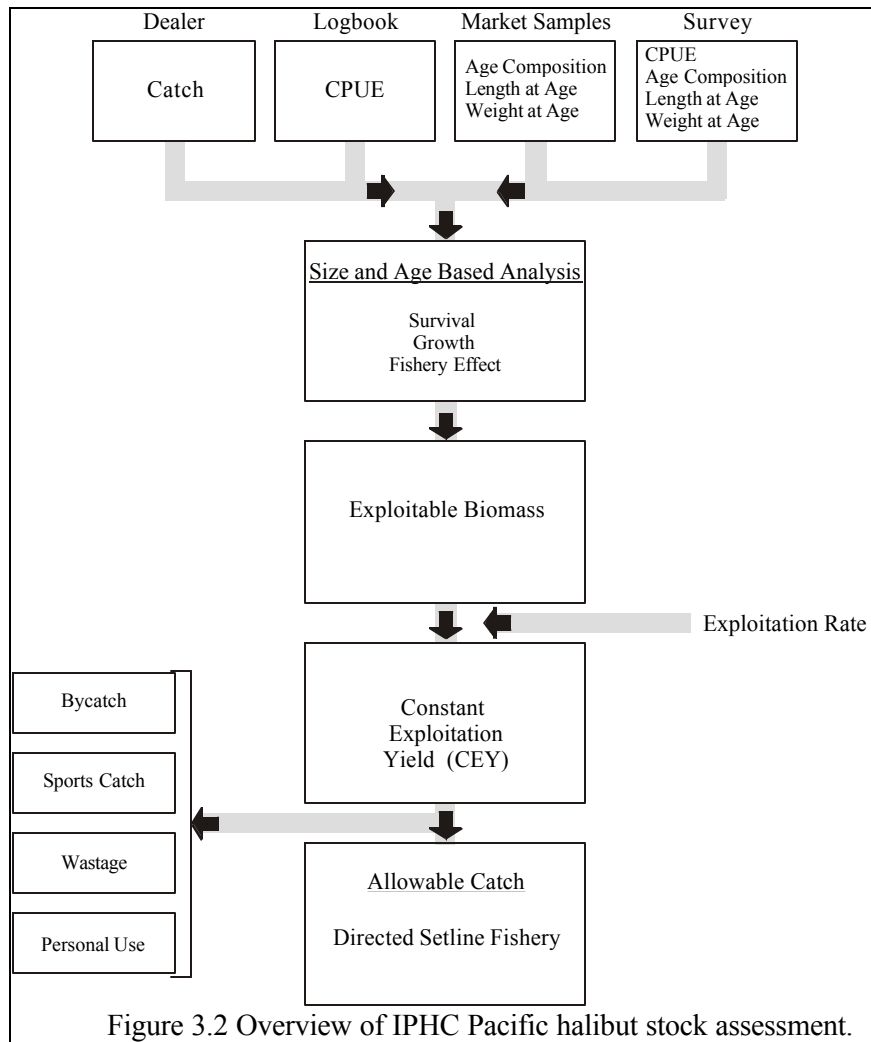
With either fitting criterion, the abundance estimates depend strongly on the natural mortality rate M used in the population model. Until 1998, the estimate $M = 0.20$ had been used in all assessments. This estimate is quite imprecise, and an analysis done by the staff suggested that a lower working value would be appropriate. The value $M = 0.15$ was chosen and used as a standard, which lowered abundance estimates in the 1998 assessment by about 30%.

In summary, the 1999 estimates were substantially lower than those from 1998 because of increased survey catchability, lower mean weights at age, and recent declines in recruitment. A change to the data going into the 1999 model lowered the setline survey catch rates from the 1990s to account for a bait change, which reduced the

population estimates by 20-30% in the eastern and central Gulf of Alaska (Areas 2C and 3A). A continuing decline in size at age also affected the estimates in Area 2C and Area 3A. Very low estimated recruitment in Area 3A in recent years implies a rapidly declining biomass in that area, but trawl surveys indicate continuing high abundance of 60-80 cm fish in that area, so more data is need to verify these estimates. However, it does now appear that recruitment has declined from the high levels of 1985-1995. In Alaska (2C and 3A) the cumulative effect is a 35-40% reduction in biomass.

The 2000 IPHC assessment (used to calculate 2001 CEYs) reverts to a simpler model (the “2000 model”). In the 1999 assessment, biomass estimates were reduced by an adjustment to recent survey catch rates that was applied to account for a bait change in 1993. That adjustment was dropped in the 2000 assessment, which brought abundance estimates back up to approximately the levels reported in the 1998 assessment.

The 2000 model is virtually identical to the 1999 model except for the parameterization of selectivity. The fits and present biomass estimates are similar for Area 2C and Area 3A, except for higher estimates of some recent recruitments in fits of the 2000 model. The 1999 model was more rigid in its treatment of selectivity, and it attempted to predict size at age as well as catch rates at age. It now appears that these features caused some problems: the catch at age was predicted incorrectly, the estimated length-specific survey selectivity in recent years in Area 3A was not very credible, and in some cases the size at age was poorly fitted. In contrast the 2000 model is more flexible and simpler. Its estimates of historical abundance are in



close agreement with the catch-at-age data, and its estimates of present abundance, while they may or may not be correct, are at least not affected by the simultaneous fitting of growth parameters.

Assessment results for Area 2C. Survey catch rates have been low for the past three years after two high values in the mid-1990s. Overall the survey results indicate little or no difference in abundance between 1985 and now, but any such conclusion is questionable. Meanwhile the commercial catch rates are very consistent in showing a decline of about one-third between 1985 and now, and this is what the model fit reflects, estimating a variable exploitable biomass of 48 M lb (56 M lb fixed) in 2001. Estimates of recent recruitment in 2C are substantially higher than in 2AB, but this difference will diminish in the future if year-class strengths turn out to be similar in 2AB and 2C, as they have in the past.

Assessment results for Area 3A. Survey and commercial catch rates agree quite well in 3A, survey values declining 20-25% from the 1985 level of 150 M lb and commercial values by 10-15%. The model estimate of 111 M lb is 25% below the 1985 level. This may be a little low; on the other hand the high survey value in 2000 appears anomalously high, and it is propping up the estimate to some extent. In terms of fixed exploitable biomass, the 2001 estimate is 139 M lb. Adding this year's commercial and survey data increased the estimate of fixed exploitable biomass at the beginning of 2000 from 116 to 144 M lb. This resulted from a general increase in the estimated abundance of younger fish—up to age 13 or so. These are the 1987 and later year-classes. Estimates of recent recruitment in Area 3A are still low but not dismal (near the 1974 level) as in the 1999 assessment.

A review of Pacific halibut biology and biomass can be found in IPHC (1998). Further details on the history of IPHC assessment methods and harvest strategy are given below and in a detailed account of the 1997 assessment (Sullivan et al. 1999).

3.1.2 Current estimates of exploitable biomass and CEY (from Clark and Parma 1998, 1999, Gilroy 1999 and Clark and Hare 2000)

The target harvest rate of 20% was chosen on the basis of calculations of stock productivity that used a coastwide average of the estimates of commercial selectivity from the age-specific fit of the model, so the biomass estimates from the age-specific fits are used to calculate exploitable biomass and CEY. Overall the estimated total setline CEY is approximately 84 M lb in 2000, compared with 63 M lb in 1999, 99 M lb in 1998, and 136 M lb in 1997.

3.1.3 Analytical estimates of abundance (from Clark and Hare 2000)

The IPHC stock assessment shows a strong 1987 year-class. The age- and length- based models show a drop in recruitment after that year-class, but these age-groups (ages 8-10 in 1998) are still estimated imprecisely.

Fits of the 2000 model in Areas 2C and 3A are shown in Figure 3.3. The upper and lower left panels show recruitment at age 8 by year for Area 2C and Area 3A. The right panels show Area 2C and 3A biomass: legal-sized (LBio), spawning (SBio), exploitable biomass calculated with internally estimated commercial selectivities that drift over years (EBio or variable ebio), and exploitable biomass calculated with an externally fixed set of selectivities (EBioFX or fixed ebio).

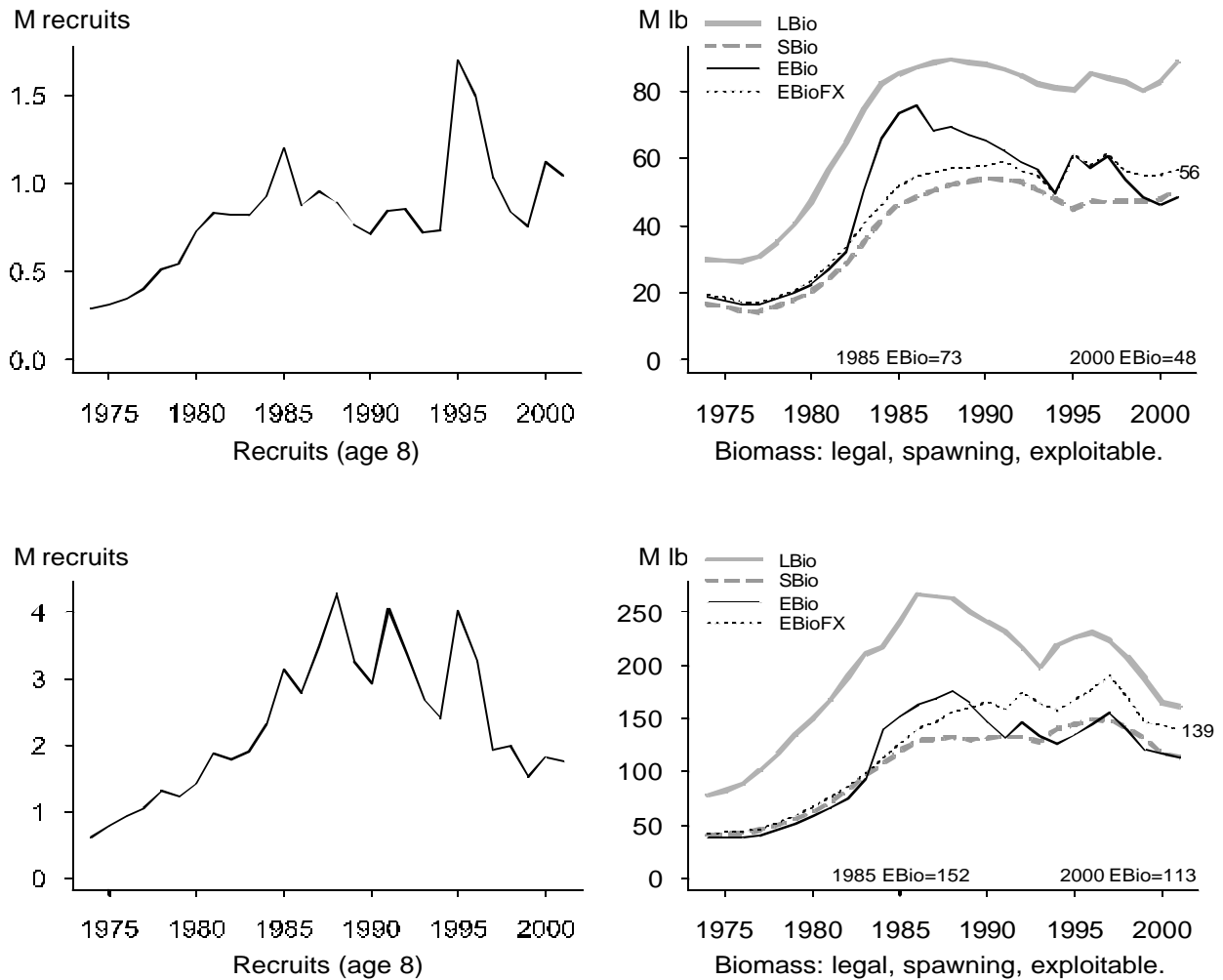


Figure 3.3 IPHC estimates of recruitment (million fish) and total biomass (million net lbs) from length and age based models.

Area 2C survey catch rates have been low for the past three years after two high values in the mid-1990s. Overall the survey results indicate little or no difference in abundance between 1985 and now, but this conclusion questionable. Meanwhile the commercial catch rates are very consistent in showing a decline of about one-third between 1985 and now, and this is what the model fit reflects, estimating a variable ebio of 48 M lb (56 M fixed) in 2001.

Survey and commercial catch rates agree quite well in 3A, survey values declining 20-25% from the 1985 level of 150 M lb and commercial values 10-15%. The model estimate of 111 M lb is 25% below the 1985 level. This may be a little low; on the other hand the high survey value in 2000 appears anomalously high, and it is propping up the estimate to some extent. In terms of fixed exploitable biomass, the 2001 estimate is 139 M lb.

Adding this year's commercial and survey data increased the estimate of fixed exploitable biomass at the beginning of 2000 from 116 to 144 M lb. This resulted from a general increase in the estimated abundance of younger fish—up to age 13 or so. These are the 1987 and later year-classes. Estimates of recent recruitment in Area 3A are still low but not dismal (near the 1974 level) as in last year's assessment.

Recruitment represents a small fraction of the exploitable biomass, and has a small annual effect. Increased selectivity over ages 8- to 12-yr accounts for the majority of biomass added annually to offset natural mortality. The very large exploitable biomass relative to recruitment buffers the population from changes. However, because exploitable biomass has been at a high level, and because recruitment has declined over the past several years, lower exploitable biomass is more probable than higher exploitable biomass for the next five years.

RECENT CHANGES IN IPHC ASSESSMENT METHODS AND HARVEST POLICY

1982-1994: stock size was estimated with CAGEAN, a strictly age-structured model fitted to commercial catch-at-age and catch-per-effort data. Because of a decrease in growth rates between the late 1970s and early 1990s, there were persistent underestimates of incoming recruitment and total stock size in the assessments done in the early 1990s.

Until 1985, allowable removals were calculated as a proportion of estimated annual surplus production (ASP), the remaining production being allocated to stock rebuilding. In 1985 the Commission adopted a constant harvest rate policy, meaning that allowable removals are determined by applying a fixed harvest rate to estimated exploitable biomass. This harvest level is called the Constant Exploitation Yield, or CEY. The fixed harvest rate was set at 28% in 1985, increased to 35% in 1987, and lowered to 30% in 1993.

1995: a new age- and length-structured model was implemented that accounted for the change in growth and was fitted to survey as well as commercial catch-at-age and catch-per-effort data. The new model produced substantially higher biomass estimates. In Area 3A this resulted from accounting for the change in growth schedule. In Area 2B, where the change in growth had been much less than in Alaska, it resulted from fitting the model to survey catch-per-effort, which showed a larger stock increase since the mid-1980s than commercial catch-per-effort. Quotas were held at the 1995 level to allow time for a complete study of the new model and results,

1996: differences in estimated selectivity between British Columbia and Alaska led to the consideration of two alternatives for fitting the model, one in which survey selectivity was a fixed function of age and the other in which it was a function of length. Spawner-recruit estimates from the new model resulted in a lowering of the target harvest rate to 20%. Quotas were increased somewhat, but not to the level indicated by the new biomass estimates.

1997: setline surveys of the entire Commission area indicated substantially more halibut in western Alaska (IPHC Areas 3B and 4) than the analytical assessment. Biomass in those areas was estimated by scaling the analytical estimates of absolute abundance in Areas 2 and 3A by the survey estimate of relative abundance in western Alaska. CEY estimates increased again, and quotas were increased again, but still to a level well below the CEYs.

1998: the working value of natural mortality was lowered from 0.20 to 0.15, reducing analytical estimates of biomass in Areas 2 and 3A by about 30%. At the same time setline survey estimates of abundance in Areas 3B and 4 relative to Areas 2 and 3A increased, so biomass estimates in the western area decreased by a smaller amount.

1999: setline survey catch rates in the 1990s were adjusted downward to account for the effect of changing to all-salmon bait when the surveys resumed in 1993. This reduced biomass estimates by 20-30%.

2000: the bait adjustment applied in 1999 was removed, which increased biomass estimates by 30-40%, approximately back to the level in the 1998 assessment. In addition, a purely age-structured model was adopted in place of the age- and size-structured model used in 1995-1999. The 2000 model produced similar estimates of present biomass but lower estimates of historical biomass.

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Table 3.2 Halibut removals through 2000 (in millions of net lbs.).

		Area 2C								Area 3A							
		Comm.	Legal					Personal		Comm.	Legal					Personal	
	CEY	Catch	Bycatch	Sport	charter	private	Wastage	Use	TOTAL	Catch	Bycatch	Sport	charter	private	Wastage	Use	TOTAL
1977		3,190	410	72			n/a	n/a	3,672	8,640	3,370	196			n/a	n/a	12,206
1978		4,320	210	82			n/a	n/a	4,612	10,300	2,440	282			n/a	n/a	13,022
1979		4,530	640	174			n/a	n/a	5,344	11,340	4,490	365			n/a	n/a	16,195
1980		3,240	420	332			n/a	n/a	3,992	11,970	4,930	488			n/a	n/a	17,388
1981	3,400	4,010	400	318			n/a	n/a	4,728	14,220	3,990	751			n/a	n/a	18,961
1982	3,400	3,500	200	489			n/a	n/a	4,189	13,530	3,200	716			n/a	n/a	17,446
1983	3,400	6,400	200	553			n/a	n/a	7,153	14,110	2,080	945			n/a	n/a	17,135
1984	5,700	5,850	210	621			n/a	n/a	6,681	19,970	1,510	1,026			n/a	n/a	22,506
1985	9,000	9,210	200	682			n/a	n/a	10,092	20,850	800	1,210			n/a	n/a	22,860
1986	11,200	10,610	200	730			n/a	n/a	11,540	32,790	670	1,908			n/a	n/a	35,368
1987	11,500	10,680	200	780			528	n/a	12,188	31,320	1,590	1,989			2,130	n/a	37,029
1988	11,500	11,370	200	1,076			377	n/a	13,023	37,860	2,130	3,264			2,171	n/a	45,425
1989	9,500	9,530	200	1,559			346	n/a	11,635	33,730	1,800	3,005			2,062	n/a	40,597
1990	8,000	9,730	680	1,330			474	n/a	12,214	28,850	2,630	3,638			1,618	960	37,696
1991	7,400	8,690	550	1,654			477	720	12,091	22,860	3,130	4,264			1,886	490	32,630
1992	10,000	9,820	570	1,668			392	370	12,820	26,780	2,640	3,899			1,513	328	35,160
1993	10,000	11,290	330	1,811			361	108	13,900	22,740	1,920	5,265			1,080	328	31,333
1994	11,000	10,380	400	2,001	986	1,000	384	108	13,273	24,840	2,350	4,511	2,553	1,958	1,652	328	33,681
1995	9,000	7,760	240	1,751	986	765	129	n/a	9,880	18,340	1,570	4,488	2,845	1,666	539	97	25,034
1996	9,000	8,800	230	2,129	1,187	943	186	n/a	11,345	19,690	1,400	4,822	2,822	1,918	587	97	26,596
1997	10,000	9,890	240	2,172	1,033	1,139	183	n/a	12,485	24,680	1,550	5,637	3,413	2,100	744	97	32,708
1998	10,500	10,230	220	2,501	1,584	917	231	170	13,352	25,870	1,490	5,407	2,985	1,717	735	74	33,576
1999	10,490	10,490	223	1,843	939	904	234	170	12,960	25,287	1,595	5,242	2,533	1,695	522	74	32,720
2000	8,400	8,460	230	1,978			401	170	11,239	19,330	1,210	4,596			301	70	25,507

shaded columns are not additive; they report charter and private (non-charter) harvest breakdown of Sport total

In summary, the halibut resource is healthy and total removals are near record levels, however, recruitment and biomass have peaked. Changes to the IPHC model have resulted in both halibut biomass and recruitment being considered to be *higher* than estimated under previous stock assessment procedures. That is, the halibut stock has not increased, but the stock assessment can now detect the level more accurately.

Exploitable biomass in Areas 2C and 3A declined by 14% and 21% respectively between 1999 and 2000. The 2000 Area 2C quota was set at 8.4 M lb, down from 10.5 M lb in 1999. The 2000 Area 3A quota was set at 18.3 M lb, down from 24.7 M lb in 1999 (Table 3.2). IPHC staff recommended for 2001 quotas of 8.78 M lb in Area 2C and 21.89 M lb in Area 3A, increases of 5 and 20 percent from 2000, respectively. Changes for Areas 2C and 3A over the past several years occurred as a result of changes to the stock assessment model more than as a result of biological changes. In the absence of model changes, short-term fluctuations in exploitable biomass, and therefore in quotas, should be small.

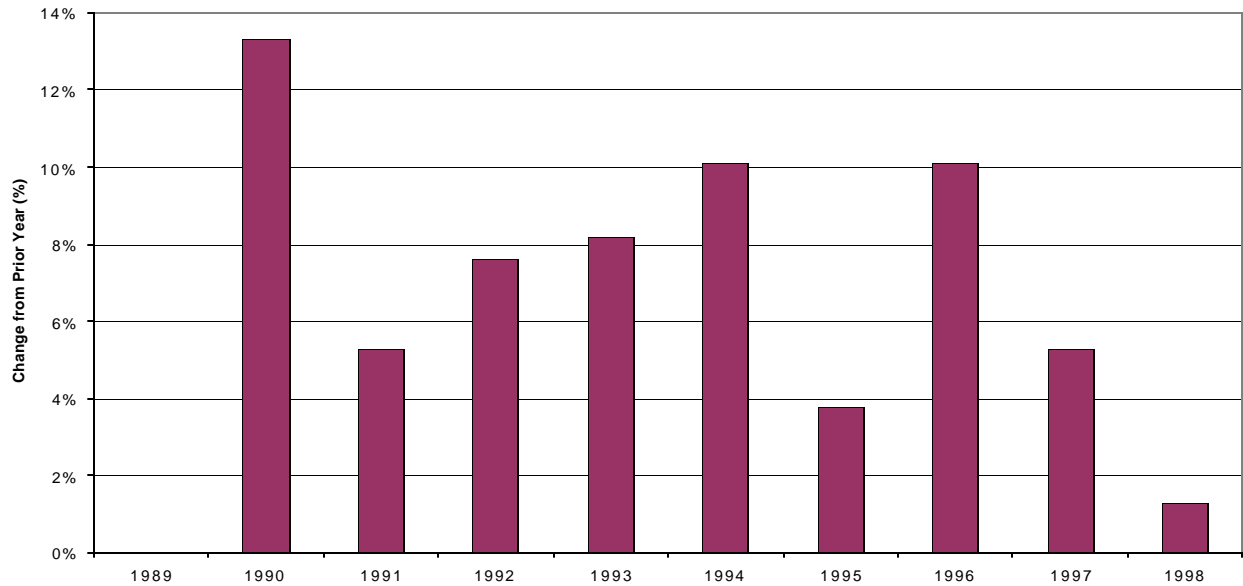
3.2 Charter fishery

Before 1973, all halibut fishing, including sport, was governed by commercial fishing regulations (IPHC 1998). Sport catches were usually incidental to saltwater sportfishing for salmon. As the sport catch increased, the IPHC clarified its authority to manage the sport halibut fishery and adopted regulations for the “sport” fishery in 1973, including an 8-month season with limitations on the individual’s daily catch and gear (Williams 1999). Since then, the popularity of bottomfish has surged and halibut sport fishing has supported a charter industry. Sport regulations have grown in complexity, with increased involvement by the State of Alaska, the Council, and NMFS. Estimates of halibut sport biomass are obtained through ADFG creel surveys, postal surveys (SWHS), and a mandatory charterboat logbook program (SCVL) which began in 1998.

Tourism Trends

According to state Alaska Visitor Statistics Program (AVSP) reports, an estimated 1.35 million visitors came to Alaska between October 1996 and September 1997. This total includes vacation/pleasure (72%) and business (10%) travelers, as well as those visiting friends and relatives (11%) and those combining business and pleasure (7%). About 80% of the total visitors came during peak summer travel months of May through September. Visitors are fairly equally split between males and females. The vacation/pleasure visitors and those visiting friends and relatives serve as the primary pool of customers using charter fishing boats. The vast majority of visitors (about 83%) come from the United States, predominantly the western states. Canada accounts for approximately 10% of the visitors with the remaining 7% coming from international or overseas locations.

The past two decades have seen growth in the number of visitors coming to Alaska. However, the rate of growth has been declining significantly in recent years. Annual growth in visitation between 1989 and 1994 averaged 10%. In 1993 and 1994, the number of visitors increased 12% each year. However, between 1994 and 1996, growth slowed to less than 6% per year. Since 1997, growth has been less than 3% per year. The 1998 *summer* season marked Alaska's lowest growth rate in a decade at 1.3% or about 1.1 million visitors between May through September 1998. The recent years represent a substantial deviation from the 7.2% average *summer* growth seen since 1989 (Figure 3.4).



**Figure 3.4. Change in the Summer Growth Rate of Visitors Entering Alaska
from May to September: 1989 to 1998**

This slower, decreased rate of growth will continue for the next two to three years (State Division of Tourism and Economic Development, personal communication). This lower growth rate correlates to a maturing visitor market, the decline in state funding to promote Alaska to visitors outside, and increased competition from other states, countries and new destinations (The McDowell Group, 1999). In addition, the national Travel Industry Association of America reported Alaska dropped from the top 10 list of destinations of choice in the 1999 *Travelometer* forecast, lending further credence to the decreased rate of growth.

How Visitors Travel to Alaska

State AVSP data also provides information on travel entry modes into Alaska. Domestic air traffic arrivals accounted for 50% of the total summer visitor arrivals in 1998, keeping its place as the dominant entry mode into Alaska. Summer highway travel continues to grow at an annual rate of about 4% per year, or 10% of the total 1998 arrivals. The Alaska Marine Highway System still makes up less than 2% of total arrivals, due in part to limited capacity and marketing.

Alaska's cruise ship sector, which has led the state's growth rate in tourism arrivals over the past few years, saw an increase of less than 3% in 1998, although it still accounted for nearly 36% of summer arrivals. This is far below the expansive cruise ship entry growth rates in the early and mid-90s of 11.4% per year compared to 7.2% for annual visitors in total. Although Alaska has held a fairly constant worldwide cruise market share, the growth of the industry in the 90s was the result of new cruise lines and larger vessels, coupled with extensive marketing. The decreased growth rate of cruise ship travel follows the overall state trend of reduced visitation growth.

Visitors Using Charterboats

The rate of visitors using charterboats varies between Areas 2C and 3A. Ninety-four percent of all saltwater charter anglers in Area 2C are non-residents and many of them arrive on cruise ships, the dominant mode of arrival entry, due to factors such as ease of travel, state ferry capacity, and air fare limitations. However, in Area 3A, only 64% of all saltwater charter anglers are non-residents. The higher resident use of charterboats in Southcentral is likely an indicator of lower boat ownership or more limited access to a boat than in Southeast Alaska. Many of the half-day charterboat trips target salmon over halibut because greater distances and time are needed to reach the more productive halibut grounds around major charter ports.

Sport Fishing License Sales

Since 1961, the growth rate of Alaska sport fishing licenses has been 6.6% annually, but over time that rate has fallen (NPFMC 1997). Since 1985 the growth rate has been 3.4% and since 1990, 2.9%. More recent 1998 ADFG data shows resident sport fish license sales dropped 1% from 1997 levels.

Growth in the number of non-resident licenses is related to the growth in the number of visitors to the state. The percentage of visitors who obtain a sport fishing license has remained fairly constant since visitor counts began, at about 20 percent. Of that 20%, the number of foreign anglers purchasing sport fishing licenses has remained fairly steady at approximately 7%. In the 1990s, the number of non-resident sport fishing licenses sold surpassed the number of resident licenses sold. This is not surprising given the small, fairly stable Alaska resident population.

During 1993-98, the number of non-resident sport fishing licenses sold in Area 2C increased from 66% to 75% of the total licenses sold (Figure 3.5). During the same time period, the number of non-resident sport fishing licenses sold in Area 3A has increased from 46% to 54% of the total licenses sold (Figure 3.6).



Figure 3.5. Number of Sport Fishing Licenses Sold in IPHC Area 2C during 1993-1998

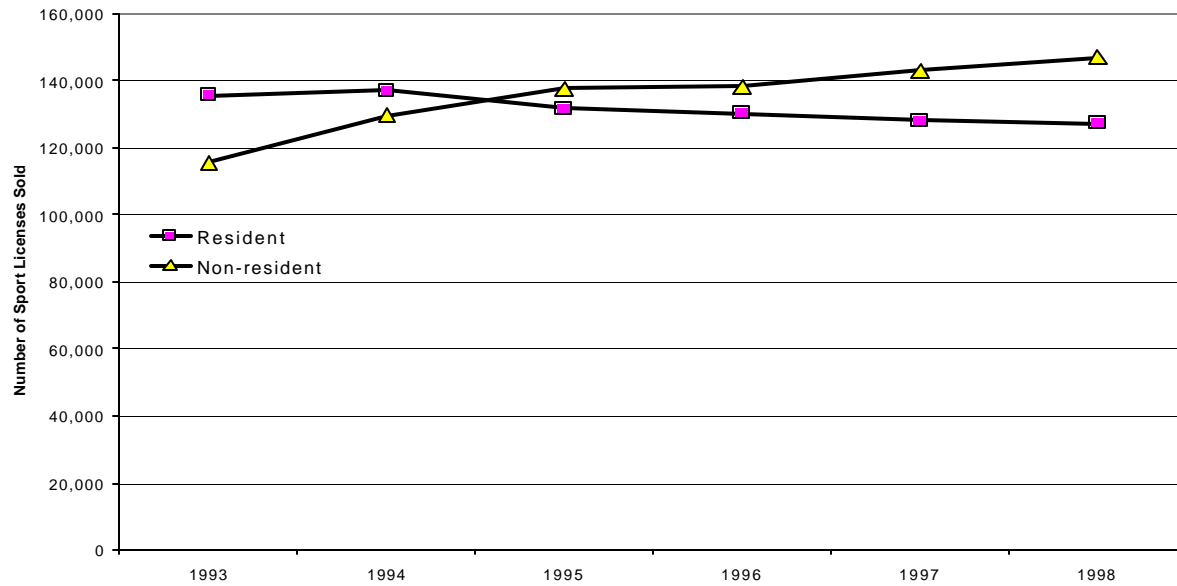


Figure 3.6. Number of Sport Fish Licenses Sold in IPHC Area 3A during 1993-1998

3.2.1 Area 2C

3.2.1.1 Current harvest levels and projected growth

Past and Current Harvest Patterns

Estimated number of fish caught and kept are provided by the SWHS. It provides estimates of both the number of halibut hooked or “caught” and those retained or “harvested.” As shown in Table 3.3 for Area 2C, the percentage of fish retained varied with area and year. The 1995-99 five year average for all areas is 60% retention. For purposes of this analysis, no additional mortality is attributed to the released fish, and consequently, the amount retained or harvested is used throughout this analysis for comparison with commercial harvest and evaluation of impacts.

Charter catch and harvest followed a similar pattern, with the 1998 levels exceeding those in 1995 by 23%. Overall, 1996-98 had similar retention rates (56-58%) compared with years of lower harvests, 61% in 1995, and 69% in 1999. In years of lower catch, fishermen were more likely to retain what fish they did catch.

For specific ports within Area 2C, Sitka and Prince of Wales had the highest charter harvest levels. Sitka ranged from 23% in 1996 to 39% of the Area 2C harvest in 1998. Prince of Wales ranged between 22% in 1997 and 32% in 1996. Ketchikan and Juneau were next in harvest levels at approximately 12% and 10%, followed by Petersburg/Wrangell (8%), Glacier Bay (6%), and Haines/Skagway (5%). Historical harvests by port are presented in Figure 3.7.

Table 3.3. Estimated number of halibut caught, kept, and released by charter anglers in Area 2C, 1995-1999.

CHARTER				
Year/SWHS Area	Caught	Kept	Released	% Retained
1995 (a)				
Ketchikan	10,589	7,025	3,564	66%
Prince of Wales	23,639	15,078	8,561	64%
Petersburg/Wrangell	8,444	4,606	3,838	55%
Sitka	21,682	13,462	8,220	62%
Juneau	9,776	5,508	4,268	56%
Haines/Skagway	178	173	5	97%
Glacier Bay	7,551	3,763	3,788	50%
	81,859	49,615	32,244	61%
1996				
Ketchikan	10,135	6,207	3,928	61%
Prince of Wales	29,936	17,385	12,551	58%
Petersburg/Wrangell	10,195	4,544	5,651	45%
Sitka	21,867	12,913	8,954	59%
Juneau	12,032	7,340	4,692	61%
Haines/Skagway	407	353	54	87%
Glacier Bay	10,221	4,848	5,373	47%
	94,793	53,590	41,203	57%
1997				
Ketchikan	8,132	5,626	2,506	69%
Prince of Wales	20,484	12,589	7,895	61%
Petersburg/Wrangell	6,674	3,566	3,108	53%
Sitka	32,478	18,502	13,976	57%
Juneau	12,141	7,190	4,951	59%
Haines/Skagway	335	264	71	79%
Glacier Bay	11,173	3,444	7,729	31%
	91,417	51,181	40,236	56%
1998				
Ketchikan	7,802	4,222	3,580	54%
Prince of Wales	24,040	15,748	8,292	66%
Petersburg/Wrangell	7,173	4,723	2,450	66%
Sitka	36,479	21,305	15,174	58%
Juneau	8,641	4,807	3,834	56%
Haines/Skagway	0	0	0	0%
Glacier Bay	9,030	3,559	5,471	39%
	93,165	54,364	38,801	58%
1999				
Ketchikan	5,382	3,900	1,482	72%
Prince of Wales	21,566	16,692	4,874	77%
Petersburg/Wrangell	6,611	3,487	3,124	53%
Sitka	27,530	18,376	9,154	67%
Juneau	8,706	6,186	2,520	71%
Haines/Skagway	154	132	22	86%
Glacier Bay	6,433	3,962	2,471	62%
	76,382	52,735	23,647	69%

Harvest biomass was calculated by multiplying average net weight by the estimated number of fish harvested. Average net weights were obtained through on-site sampling for length measurements and application of the IPHC length-weight relationship. In some years and locations, class-specific (charter and non-charter) mean weights were obtained, in other areas only an overall mean was used.

Note also that collection of average weights was limited to certain ports and often does not correspond with SWHS areas. Because data collection was limited to certain areas, estimation of harvest biomass requires the assumption that the samples are representative over a much larger area (e.g., the mean charter weight obtained in Juneau is applied to harvests in Haines/Skogway and Glacier Bay). Overall harvest biomass estimates for each IPHC regulatory area are not affected much by biased sampling at any one port, but the biomass estimates for any one class or SWHS area could be significantly biased. Known issues include difficulty sampling halibut caught by non-charter anglers, non-participation by some charters, selective cleaning of small halibut at sea, and non-random sampling.

Estimation procedures varied slightly by Area, but in both areas mean weight was rounded to the nearest 0.1 pound before multiplying by the number of fish.

Average net weights for sport-caught halibut is reported for 1995-98 (Table 3.4). A change in estimation procedure for determining halibut weights occurred in 1998, when separate estimates for charter and non-charter halibut resulted in average weights that are not directly comparable to earlier years. In 1998, charter halibut were larger in Prince of Wales, Petersburg/Wrangell, and Sitka, and non-charter halibut were larger in Ketchikan and Juneau. In 1999, charter harvests were larger in only Prince of Wales and Petersburg/Wrangell.

Converting estimated numbers of fish from the SWHS to biomass retained using creel census data for the charter and non-charter fisheries for 1995-99 (Table 3.5) indicates that

Table 3.4 - Average Net Weight (in lbs) of Pacific harvested in Area 2C from 1995-1999 by port.

Port/Year	Private			Charter			Overall		
	n	Avg. Net Wt. (lbs)	SE	n	Avg. Net Wt. (lbs)	SE	n	Avg. Net Wt. (lbs)	SE
Ketchikan									
1995	--	--	--	--	--	--	549	14.2	0.6
1996	--	--	--	--	--	--	188	20.5	1.6
1997	--	--	--	--	--	--	264	22.1	1.4
1998	178	17.4	1.7	105	13.8	0.6	--	--	--
1999	242	21.5	1.3	83	23.2	2.1	--	--	--
W. Prince of Wales									
1995	--	--	--	--	--	--	677	17.0	0.7
1996	--	--	--	--	--	--	312	17.1	1.0
1997	--	--	--	--	--	--	158	14.7	1.2
1998	82	20.5	2.2	15	29.1	12.7	--	--	--
1999	133	21.2	3.0	451	12.1	0.6	--	--	--
Petersburg/Wrangell									
1995	--	--	--	--	--	--	304	22.7	1.4
1996	--	--	--	--	--	--	158	29.6	1.8
1997	--	--	--	--	--	--	113	32.8	2.6
1998	66	33.0	3.5	48	49.9	5.7	--	--	--
1999	68	23.8	2.4	82	37.4	3.7	--	--	--
Sitka									
1995	--	--	--	--	--	--	253	26.9	1.8
1996	--	--	--	--	--	--	118	28.9	2.9
1997	--	--	--	--	--	--	153	20.8	1.6
1998	48	20.0	3.2	345	31.0	1.9	--	--	--
1999	101	17.6	2.7	982	20.8	0.8	--	--	--
Juneau									
1995	--	--	--	--	--	--	299	17.3	1.2
1996	--	--	--	--	--	--	300	20.3	1.4
1997	--	--	--	--	--	--	221	20.4	1.4
1998	411	21.7	1.1	329	20.5	0.6	--	--	--
1999	292	20.2	1.4	406	13.0	0.4	--	--	--

variation occurred in halibut biomass removed from Area 2C by charter anglers. In pounds, harvest peaked in 1998 (1.58 M lb) and declined to 0.94 M lb in 1999, below the 1995 level (0.99 M lb) (Figure 3.8).

Sitka, with 41% of average biomass removed for 1995-99, and Prince of Wales, with 22%, led Area 2C ports in harvest biomass. Petersburg/Wrangell, with 14%, was third in poundage removed. Ketchikan and Juneau were next with harvests of approximately 10 and 9% each, followed by Glacier Bay (6%), and Haines/Skagway (<1/2%). Logbook data shown is client harvest only, but may include some undetected crew member harvests. Reported crew member harvests totaled 451 halibut in Area 2C in 1998, but are not shown in the tables. Other known problems with the logbook data include (a) failure to report the port of landing, (b) errors in recording the number of fish or statistical areas, (c) deliberate exaggeration, under-reporting, or failure to report harvest, (d) widespread failure or reluctance to report halibut caught by skipper or crew; (e) recording halibut harvested by crew members as taken by clients (previously mentioned), and (f) failure to obtain and submit logbook data.

Differences in where fish were landed vs. where they were caught plays a major role in estimation of biomass due to collection of halibut lengths during port sampling. Therefore, for the purpose of properly combining estimated average weights in a given port to the reported logbook harvest, it was necessary to aggregate the retained and released data based on where the fish were reported landed and not where they were caught (i.e., charterboats fishing out of Juneau and Ketchikan routinely catch halibut in any one of three SWHS areas on any given trip).

Baseline data for total angler days by residency, rods fished, boat hours fished, and numbers of bottomfish retained and released are reported for 1998 and 1999 from the SCVL (Table 3.6). In summary, Area 2C clients fished over 53,000 lines during 57,000 hours of bottomfish fishing in 1998. They retained 64,000 and released 29,000 halibut, retained 26,000 and released 27,000 rockfish, and retained over 11,000 lingcod in over 62,000 fishing days. Additionally, 367 lines were fished by crew, with 451 halibut retained and 14 released. This data reflects only partial bottomfish fishing and harvest as not all charter operators reported crew fishing on the logbooks.

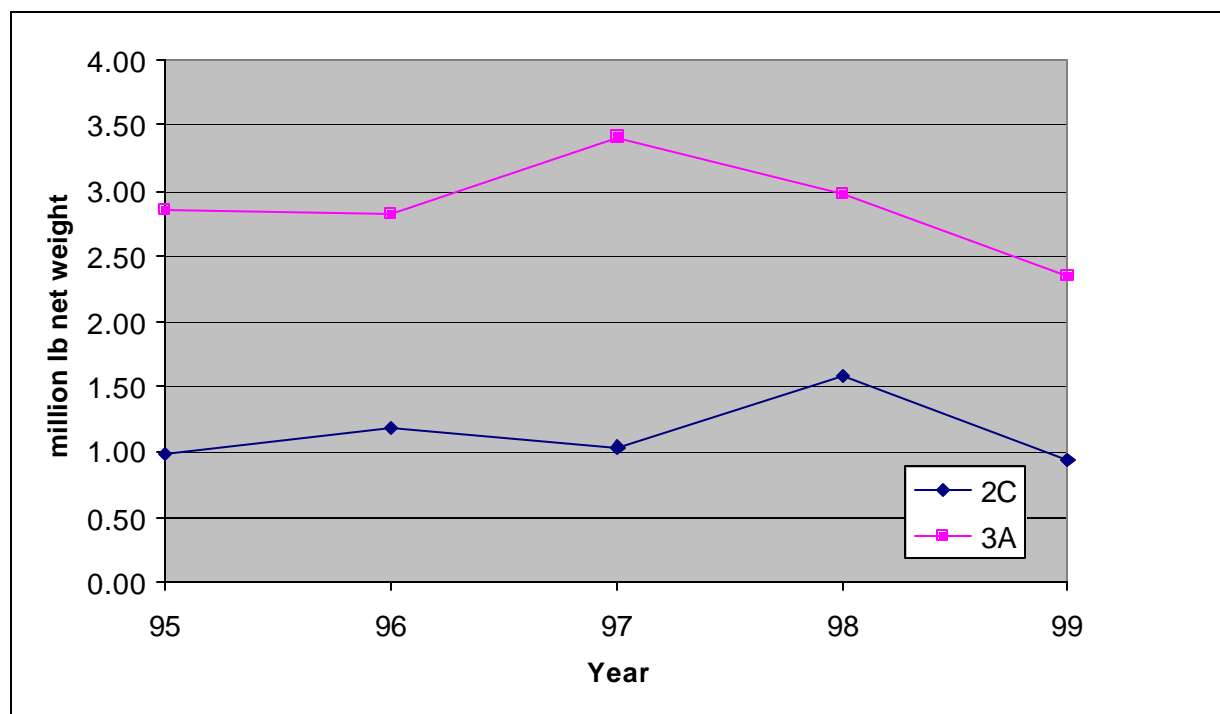
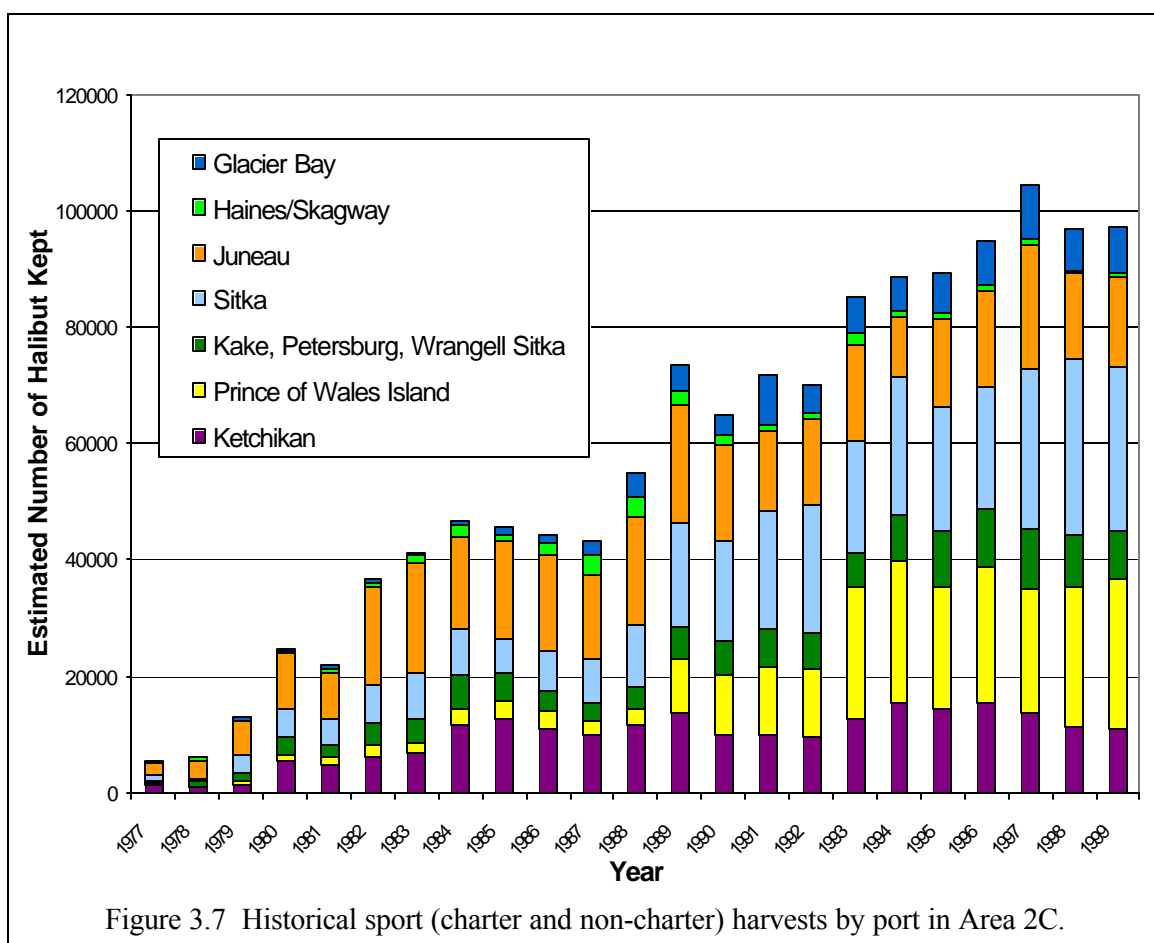
Clients fished over 51,000 lines during 53,000 hours of bottomfish fishing in 1999. They retained 63,000 and released 30,000 halibut, retained nearly 28,000 and released 26,000 rockfish, and retained nearly 10,000 lingcod in nearly 56,000 fishing days. Reported bottomfish fishing by crew totaled 2,000 fishing days and boat hours fished using 1,800 lines. Nearly 2,200 halibut were retained and 348 were released. Three hundred rockfish were retained and 200 were released. Nearly 90 lingcod were retained. Since 1999 logbook data are preliminary, a rough comparison between logbook reports for the two years indicates similar fishing practices for all reports except for angler fishing days, which appeared to drop by about 9%.

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Table 3.5 Estimated sport harvest biomass (lbs net wt.)based on the estimated number of fish harvested in Area 2C, by fishery, 1995-1999.

Class	Area	1995 (a)	% of Total	1996	% of Total	1997	% of Total	1998	% of Total	1999	% of Total
Charter											
	Ketchikan	99,755	10.1%	127,244	10.7%	124,335	12.0%	58,264	3.7%	90,480	9.6%
	Prince of Wales	256,326	26.0%	297,284	25.0%	185,058	17.9%	458,267	28.9%	201,973	21.5%
	Petersburg/Wrangell	104,556	10.6%	134,502	11.3%	116,965	11.3%	235,678	14.9%	130,414	13.9%
	Sitka	362,128	36.7%	373,186	31.4%	384,842	37.2%	660,455	41.7%	382,221	40.7%
	Juneau	95,288	9.7%	149,002	12.6%	146,676	14.2%	98,544	6.2%	80,418	8.6%
	Haines/Skagway	2,993	0.3%	7,166	0.6%	5,386	0.5%	0	0.0%	1,716	0.2%
	Glacier Bay	65,100	6.6%	98,414	8.3%	70,258	6.8%	72,960	4.6%	51,506	5.5%
	Charter Subtotal	986,146	100.0%	1,186,797	100.0%	1,033,519	100.0%	1,584,166	100.0%	938,728	100.0%
Non-charter											
	Ketchikan	105,904	13.8%	186,735	19.8%	178,104	15.6%	123,349	13.5%	152,414	16.9%
	Prince of Wales	97,410	12.7%	100,565	10.7%	126,596	11.1%	169,740	18.5%	191,796	21.2%
	Petersburg/Wrangell	110,821	14.5%	168,424	17.9%	224,713	19.7%	140,976	15.4%	110,575	12.2%
	Sitka	214,931	28.1%	229,090	24.3%	188,240	16.5%	179,960	19.6%	173,290	19.2%
	Juneau	166,720	21.8%	184,202	19.5%	287,477	25.2%	211,488	23.1%	188,587	20.9%
	Haines/Skagway	11,816	1.5%	17,377	1.8%	15,157	1.3%	12,239	1.3%	15,089	1.7%
	Glacier Bay	57,557	7.5%	56,231	6.0%	118,279	10.4%	78,793	8.6%	72,518	8.0%
	Noncharter Subtotal	765,159	100.0%	942,624	100.0%	1,138,566	100.0%	916,544	100.0%	904,269	100.0%
Total											
	Ketchikan	205,659	11.7%	313,978	14.7%	302,439	13.9%	181,612	7.3%	242,894	13.2%
	Prince of Wales	353,736	20.2%	397,849	18.7%	311,655	14.3%	628,007	25.1%	393,770	21.4%
	Petersburg/Wrangell	215,378	12.3%	302,926	14.2%	341,678	15.7%	376,654	15.1%	240,989	13.1%
	Sitka	577,059	33.0%	602,276	28.3%	573,082	26.4%	840,415	33.6%	555,510	30.1%
	Juneau	262,009	15.0%	333,204	15.6%	434,153	20.0%	310,032	12.4%	269,005	14.6%
	Haines/Skagway	14,809	0.8%	24,543	1.2%	20,543	0.9%	12,239	0.5%	16,805	0.9%
	Glacier Bay	122,657	7.0%	154,645	7.3%	188,537	8.7%	151,752	6.1%	124,024	6.7%
	Total Area 2C	1,751,305	100.0%	2,129,421	100.0%	2,172,085	100.0%	2,500,710	100.0%	1,842,997	100.0%

(a) SWHS Estimates for 1995 are not revised using methods implemented for revising 1996-1998 as the source data can not be retrieved from backup tapes.



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Table 3.6. Baseline 1998 and 1999 participation, harvest and effort data for halibut charter fishery in Area 2C (Source:SCVL).

	1999				1998			
	Resident	Non-Resident	Unknown	Total	Resident	Non-Resident	Unknown	Total
Number of unique active businesses	335	48	3	386	351	45	1	397
Number of unique active vessels	516	70	2	588	504	76	1	581

Area 2C Year Round Resident and non Resident Crew and Clients

	1999						1998					
	Resident	Non-Resident	Unknown	Client Total	Crew	Total	Resident	Non-Resident	Unknown	Client Total	Crew	Total
Angler-Days	1,275	54,688	0	55,963	2,015	57,978	1,890	59,681	865	62,436		
Rods Fished for Bottomfish	1,137	50,008	0	51,145	1,771	52,916	1,575	51,161	762	53,498	367	53,865
Boat Hours Fished	1,958	51,354	0	53,313	2,019	55,331	n/a	n/a	n/a	55,726	n/a	55,726
Halibut Kept	1,465	61,647	0	63,112	2,156	65,268	1,909	61,172	1,123	64,204	451	64,655
Halibut Released	656	29,274	0	29,930	348	30,278	1,048	27,546	625	29,219	14	29,233
Pelagic Rockfish Kept	399	12,328	0	12,727	139	12,866	404	11,384	232	12,020	0	12,020
Pelagic Rockfish Released	547	19,052	0	19,599	144	19,743	n/a	n/a	n/a	n/a	n/a	n/a
Other Rockfish Kept	395	14,358	0	14,753	164	14,917	351	13,040	195	13,586	51	13,637
Other Rockfish Released	192	6,500	0	6,692	50	6,742	n/a	n/a	n/a	n/a	n/a	n/a
All Rockfish Released	739	25,552	0	26,291	194	26,485	1,192	25,638	748	27,578	0	27,578
Lingcod Kept	251	9,659	0	9,910	86	9,996	299	10,496	255	11,050	53	11,103
Lingcod Released	54	1,976	0	2,030	23	2,053	n/a	n/a	n/a	n/a	n/a	n/a

3.2.1.2 Current participation and projected growth

The following excerpts from State of Alaska regulations describe state requirements for sport fishing guides:

5 AAC 75.075 FISHING SERVICES AND SPORT FISHING GUIDES; REGISTRATION REQUIREMENTS; REGULATION OF ACTIVITIES.

(a) An owner of a business intending to conduct fishing services shall register annually with the department before the business conducts fishing services. To meet the registration requirement of this subsection, the owner shall complete a fishing services registration form provided by the department.

The following information must be provided on the fishing services registration form at the time of registration:

- (1) the name, permanent address, local address, mailing address, and phone number of the business conducting the fishing service;
- (2) the name, permanent residence address, local residence address, mailing address, and phone number of each owner of the business conducting the fishing service;
- (3) the areas in which the fishing service intends to operate; and
- (4) other information required by the department on the registration form.

(b) The owner of a business that conducts fishing services

- (1) may not directly provide fishing guide services to anglers unless the owner is also registered as a fishing guide under (c) of this section;
- (2) may employ or contract with a person who is a fishing guide registered under (c) of this section to provide fishing guide services.

(c) A person who intends to provide fishing guide services shall register annually with the department before the person provides fishing guide services. To meet the registration requirement of this subsection, the person intending to provide fishing guide services shall complete a fishing guide services registration form provided by the department. The following information must be provided on the fishing guide service registration form at the time of registration:

- (1) the name, permanent residence address, mailing address, and phone number of the person who will provide fishing guide services;
- (2) the areas in which the fishing guide will operate; and
- (3) other information required by the department on the registration form.

(d) A person who provides fishing guide services may only provide fishing guide services

- (1) as an employee of or as a contractor under an agreement with a business that conducts fishing services that has registered under (a) of this section; or
- (2) as the owner of a business that conducts fishing services that has registered under (a) of this section.

(e) While engaged in providing fishing guide services, a person who provides fishing guide services shall have in possession:

- (1) a copy of the person's completed fishing guide registration form; and
- (2) a copy of the completed registration form of the business conducting the fishing services by which the person providing the fishing guide services is employed or with which the person is affiliated.

(f) A person who provides fishing guide services or a business that conducts fishing services may not aid in the commission of a violation of AS 16.05

- AS 16.40 or a regulation adopted under AS 16.05 - AS 16.40 by an angler who is a client of the person or of the business.

5 AAC 75.076 FISHING SERVICES AND SPORT FISHING GUIDES REPORTING REQUIREMENTS.

- (a) In conjunction with the activities regulated under 5 AAC 75.075 (a) - (f), each fishing guide, and the owner or agent of each fishing service, that operates a charter vessel used to provide fishing guide services in salt waters shall complete a State of Alaska, Department of Fish and Game, 1999 Saltwater Charter Vessel Logbook, herein adopted by reference. The logbook requires information necessary for the management and conservation of fishery resources or the regulation of the guided sport fishing industry, including:
- (1) the license numbers and names of the vessels licensed under AS 16.05.490 that are used during the provision of fishing guide services in marine waters;
 - (2) repealed 5/15/99;
 - (3) the locations of fishing; and
 - (4) the effort, catch, and harvest of fish by persons who are clients of a business that conducts fishing services or of a person who provides fishing guide services.
- (b) A person required to complete a logbook under (a) of this section shall do so and return it to the department, in the manner specified in the logbook.
- (c) A person may not make a false entry in the logbook required in (a) of this section.

Tables 3.7 and 3.8 list the number of businesses and vessels that indicated intent at registration to provide saltwater guide services in 1998 and 1999. A total of 589 and 669 businesses registered for saltwater guiding in 1998 and 1999 in Area 2C. A total of 92 and 34 businesses registered in 1998 and 1999 for both Areas 2C and 3A. A total of 662 and 1,081 vessels registered to provide saltwater guide services in 1998 and 1999.

3.2.1.2.1 Active businesses

The number of unique active businesses was consistent for Area 2C as indicated from the mandatory

SSCL, with 397 and 386 vessels in 1998 and 1999, respectively (Table 3.6), reflecting a slight decrease in business participation from the two years in which data is available from logbooks. Approximately 87% of registered businesses in both years were owned by Alaska residents as indicated by permanent mailing address.

3.2.1.2.2 Active vessels

The number of unique active vessels was also consistent for Area 2C, with 581 and 588 vessels in 1998 and 1999, respectively, reflecting little increase in vessel participation (Table 3.6). Approximately 87% of registered businesses in both years were owned by Alaska residents as indicated by permanent mailing address.

Table 3.7 Number of businesses that indicated an intent at registration to provide guide services in saltwater, 1998-1999

Fishing Service Locations	1999	1998
SALTWATER		
Southeast only - Cape Suckling to Dixon Entrance	669	589
Southcentral only - Kodiak to Cape Suckling	692	697
Both Southeast and Southcentral	34	92
Other Alaska	30	-
Total	1425	1378

Table 3.8 Number of vessels operated by region for businesses indicating saltwater guiding services at registration, 1998-1999

Fishing Service Locations	1999	1998
SALTWATER		
Southeast only - Cape Suckling to Dixon Entrance	1081	662
Southcentral only - Kodiak to Cape Suckling	968	596
Other Alaska	30	-
Total	2079	1258

3.2.1.2.3 Clients

Because the SWHS cannot identify the target fishery for a given fishing trip, charter client data are presented for all saltwater charters. Area 2C saltwater charter clients in 1998 totaled 2,424 Alaska residents and 37,976 non-residents. Non-residents comprised between 86% and 100% of clients in Area 2C ports in 1998, with an average of 94% for all ports in the area (Table 3.9). For comparison, non-residents comprised 48% of anglers saltwater fishing from private boats. Note that particularly for Area 2C, these clients were also fishing for salmon. Therefore, the data presented should not be interpreted to describe the halibut charter fishery, but may be used as a proxy of angler effort. Estimates for 1994-97 are not currently available. Due to data limitations, no projection of charter client growth is available for the short- or long-term.

Projections

Projected growth for businesses and vessels actively participating in the halibut charter industry is flat, given only two years of logbook data. Due to sampling bias, SWHS data for 1994-97 to describe client effort are not currently available.

3.2.2 Area 3A

3.2.2.1 Current catch and harvest levels and projected growth

Past and Current Catch Patterns

Estimates of the number of fish harvested and released are provided by the SWHS. For all areas except the Kenai Peninsula, harvest by the charter and non-charter sector is derived by multiplying the total SWHS estimate by the proportions of charter and non-charter harvest estimated from the Supplemental Survey. For Kenai Peninsula, the harvest by chartered anglers is explicitly estimated in the standard survey.

SWHS data indicate that much higher levels of catch and lower levels of retention occur in Area 3A (Table 3.10) compared with Area 2C. Peak Area 3A charter halibut catches occurred in 1997 (316,000 fish), 8% higher than the next highest catch in 1998 (275,000 fish) and 1996 (292,000 fish). As in Area 2C, 1999 with the lowest level of catch (233,000) had the highest retention level (57%). The next four years had roughly a 50% retention rate.

Harvest estimates for Area 3A are not presented strictly by SWHS area. Instead, the estimates for West Cook Inlet and Kenai Peninsula are re-distributed to correspond with three fairly distinct fisheries: (1) North Gulf (Gore Pt. to PWS), (2) Lower Cook Inlet (south of Anchor Pt and west of Gore Pt.), and (3) Central Cook Inlet (Cook Inlet north of Anchor Point). The re-distribution of these estimates was necessary for computation of harvest biomass because average weights are estimated based on sampling in these three fisheries. Re-distribution of SWHS harvest estimates is done based on site codes reported in the survey, and is subject to variations in how the public responds to the survey. Knowledgeable respondents, for example, report harvest by location fished, whereas nonresidents, unfamiliar with the area, tend to report harvest under sites most closely corresponding to their port of landing.

In pounds, harvest peaked in 1997 (3.4 M lb) and declined to 2.5 M lb in 1999, below the 1995 level (2.8 M lb). Lower Cook Inlet, with 41% of average biomass removed for 1995-99, and Central Cook Inlet, with 25%, led Area 3A ports in harvest biomass. Prince William Sound and North Gulf were next with harvests of approximately 13% each, followed by Kodiak (6%), and Yakutat (4%).

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Table 3.9 Resident and non-resident saltwater anglers from 1998 SWHS.

Area 2C	Charter					Noncharter				
	Resident	%	Nonresident	%	Total	Resident	%	Nonresident	%	Total
Ketchikan	242	3%	9,125	97%	9,367	4,251	52%	3,917	48%	8,168
Prince of Wales Island	454	8%	5,114	92%	5,568	1,797	42%	2,504	58%	4,301
Kake, Petersburg, Wrangell, Stikine	323	14%	2,028	86%	2,351	2,290	50%	2,312	50%	4,602
Sitka	649	5%	12,498	95%	13,147	4,765	41%	6,760	59%	11,525
Juneau	563	9%	5,687	91%	6,250	9,380	67%	4,554	33%	13,934
Skagway	45	3%	1,522	97%	1,567	239	31%	535	69%	774
Haines	0	0%	553	100%	553	369	32%	787	68%	1,156
Glacier Bay	148	9%	1,449	91%	1,597	1,464	58%	1,081	42%	2,545
Total	2,424	6%	37,976	94%	40,400	24,555	52%	22,450	48%	47,005
	6%		94%		100%	52%		48%		100%
Area 3A										
Yakutat	137	7%	1,844	93%	1,981	295	26%	830	74%	1,125
Prince William Sound	5,201	44%	6,631	56%	11,832	13,742	64%	7,602	36%	21,344
West Cook Inlet	124	11%	1,026	89%	1,150	572	77%	174	23%	746
Cook Inlet west of Gore Point	23,684	36%	41,984	64%	65,668	31,394	64%	17,576	36%	48,970
Kodiak	1,109	35%	2,034	65%	3,143	5,097	74%	1,802	26%	6,899
Total	30,255	36%	53,519	64%	83,774	51,100	65%	27,984	35%	79,084
	36%		64%		100%	65%		35%		100%

Less change occurred in the Area 3A halibut charter fishery between 1998 and 1999 than occurred in Area 2C: 1) the number of halibut harvested was approximately the same despite a decrease of 20% in client angler-days; and 2) the average weight of halibut decreased by only 6%.

Average weights were estimated using data from selected ports and often do not correspond with SWHS areas. Average weight of halibut by Area 3A port is reported in Table 3.11. Annual average weights in Area 3A were more variable and generally lower than in Area 2C. Average weights from charter trips were larger than from private trips.

Estimation of harvest biomass requires the assumption that the average weight estimates are representative of the area to which they are applied (e.g. the mean charter weight obtained in Homer is applied to harvest in all of Lower Cook Inlet). Overall harvest biomass estimates for each IPHC regulatory area are not affected much by biased sampling at any one port, but the biomass estimates for any one class or SWHS area could be significantly biased. Known issues include difficulty sampling halibut caught by non-charter anglers, non-participation by some charters, selective cleaning of small halibut at sea, and non-random sampling.

Lower Cook Inlet (43%) and Central Cook Inlet (25%) fisheries accounted for 67% of Area 3A charter halibut harvests for the period 1995-99 (Table 3.10). North Gulf and Prince William Sound

followed with roughly 12% each. Kodiak and Yakutat landed an average 5% and 3%, respectively. Yakutat nearly doubled its percentage of harvest between 1994 and 1998, while biomass increased 250%. Kodiak's

Table 3.10 Estimated number of halibut caught, kept and released by charter and non-charter anglers in Area 3A, 1995-1999.

CHARTER				
Year/Fishery	Caught	Kept	Released	% Retained
1995 (a)				
Yakutat	2,412	1,828	584	76%
Prince William Sound	21,119	12,474	8,645	59%
North Gulf	27,985	16,331	11,654	58%
Lower Cook Inlet	117,671	56,114	61,557	48%
Central Cook Inlet	80,118	44,584	35,534	56%
Kodiak	14,171	6,512	7,659	46%
	263,476	137,843	125,633	52%
1996				
Yakutat	4,242	2,914	1,328	69%
Prince William Sound	19,390	9,897	9,493	51%
North Gulf	26,075	15,421	10,654	59%
Lower Cook Inlet	149,288	67,997	81,291	46%
Central Cook Inlet	81,678	41,573	40,105	51%
Kodiak	10,862	5,155	5,707	47%
	291,535	142,957	148,578	49%
1997				
Yakutat	6,758	4,161	2,597	62%
Prince William Sound	26,769	13,883	12,886	52%
North Gulf	31,572	17,633	13,939	56%
Lower Cook Inlet	156,115	67,923	88,192	44%
Central Cook Inlet	81,072	43,442	37,630	54%
Kodiak	14,094	5,814	8,280	41%
	316,380	152,856	163,524	48%
1998				
Yakutat	6,459	4,274	2,185	66%
Prince William Sound	22,880	13,086	9,794	57%
North Gulf	26,573	16,486	10,087	62%
Lower Cook Inlet	133,178	60,823	72,355	46%
Central Cook Inlet	78,318	43,780	34,538	56%
Kodiak	8,345	4,919	3,426	59%
	275,753	143,368	132,385	52%
1999 (Preliminary)				
Yakutat	2,437	2,437	0	100%
Prince William Sound	22,699	14,204	8,495	63%
North Gulf	20,664	15,088	5,576	73%
Lower Cook Inlet	107,495	53,321	54,174	50%
Central Cook Inlet	61,182	38,654	22,528	63%
Kodiak	18,317	8,022	10,295	44%
	232,794	131,726	101,068	57%
(a) SWHS estimates for 1995 were not revised using methods implemented for revising 1996-1998 because source data can not be retrieved from backup tapes.				

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percentage dropped by 67%, while its biomass declined by 14%. Lower and Central Cook Inlet biomass increased by 12% and 46%, respectively. Historical harvests by port are presented in Figure 3.9.

Table 3.11 Average net weight (lbs) of Pacific halibut harvested in Area 3A from 1995-1999 by port.

Fishery/Year	Private			Charter			Overall		
	n	Avg. Net Wt. (lbs)	SE	n	Avg. Net Wt. (lbs)	SE	n	Avg. Net Wt. (lbs)	SE
Yakutat									
1995	--	--	--	--	--	--	--	--	--
1996	--	--	--	--	--	--	--	--	--
1997	--	--	--	--	--	--	--	--	--
1998	--	--	--	--	--	--	2,087	35.5	0.6
1999	101	22.6	2.3	762	43.3	1.5	--	--	--
Prince William Sound ^a									
1995	119	23.4	2.2	552	29.3	1.2	--	--	--
1996	109	36.3	2.9	498	26.8	1.1	--	--	--
1997	164	26.5	1.8	746	35.1	0.9	--	--	--
1998	144	25.6	2.4	409	28.4	1.4	--	--	--
1999	472	22.0	--	1498	23.9	--	--	--	--
North Gulf ^b									
1995	412	16.8	--	723	20.4	--	--	--	--
1996	247	16.1	--	509	15.8	--	--	--	--
1997	214	14.9	--	374	26.4	--	--	--	--
1998	233	16.9	--	433	22.3	--	--	--	--
1999	250	16.8	--	538	20.9	--	--	--	--
Lower Cook Inlet ^c									
1995	152	17.7	1.6	1161	20.4	0.5	--	--	--
1996	696	13.0	0.4	1208	20.2	0.5	--	--	--
1997	392	15.0	0.8	850	21.3	0.6	--	--	--
1998	431	13.0	0.6	711	18.7	0.7	--	--	--
1999	392	13.8	0.6	569	16.5	0.5	--	--	--
Central Cook Inlet ^d									
1995	289	13.3	0.9	930	17.3	0.5	--	--	--
1996	267	14.6	1.2	768	16.9	0.6	--	--	--
1997	444	15.0	0.6	610	15.9	0.7	--	--	--
1998	364	13.2	0.6	514	18.8	0.8	--	--	--
1999	372	16.0	0.8	487	17.4	0.7	--	--	--
Kodiak									
1995	378	27.8	1.4	292	27.2	1.9	--	--	--
1996	427	25.7	1.5	363	30.8	1.8	--	--	--
1997	260	26.6	1.4	241	30.4	1.6	--	--	--
1998	646	25.9	1.0	667	27.1	1.0	--	--	--
1999	693	23.4	0.9	386	27.5	1.6	--	--	--

^aEstimates based on sampling at Valdez only in 1995-1998, and Valdez, Whittier, and Cordova in 1999.

^bNorth Gulf estimates based on sampling at Seward. SE not available yet.

^cLower Cook Inlet estimates based on sampling at Homer only.

^dCentral Cook Inlet estimate based on sampling at the Deep Creek and Anchor Point beaches.

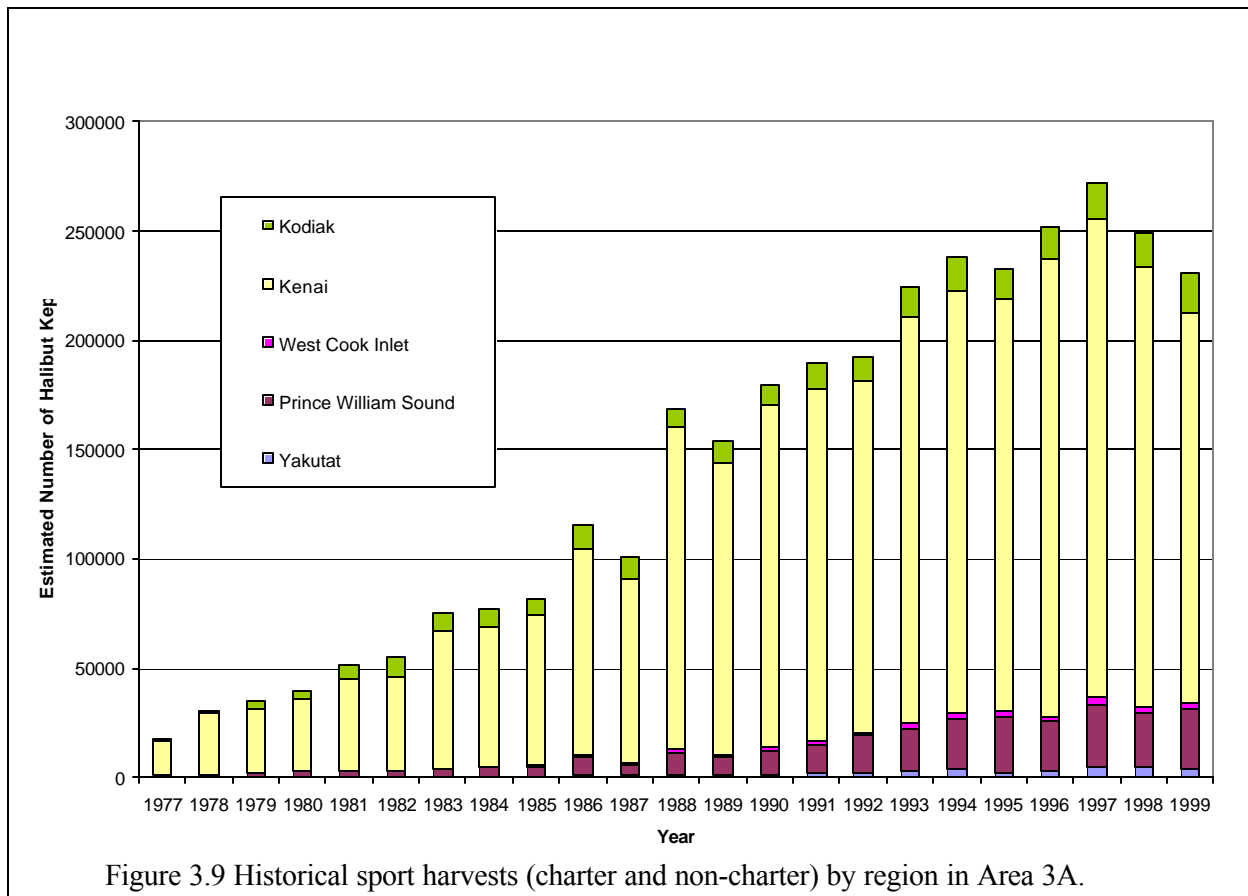
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Area 3A clients fished over 90,000 lines during 86,000 hours of bottomfish fishing in 1998. They retained 159,000 and released 147,000 halibut in over 98,000 fishing days. Additionally, 950 lines were fished by crew, with 1,738 halibut retained and 700 released. Clients fished nearly 94,000 lines during 111,000 hours of bottomfish fishing in 1999. They retained 157,000 and released 123,000 halibut in nearly 80,000 fishing days. Crew fished 11,000 lines over 9,000 angler days. They kept 13,000 and released 7,000 halibut. Crew reporting for 1998 are believed to be underestimates due to the introduction of the new logbook form. The crew reporting form likely went unnoticed on the back of the forms.

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Table 3.12. Estimated sport harvest biomass (pounds net wt.) for Area 3A, by fishery, 1995-1999.

Class	Fishery	1995	%of Total	1996	%of Total	1997	%of Total	1998	%of Total	1999	%of Total
Charter											
	Yakutat	53,560	2%	78,095	3%	146,051	4%	151,727	5%	105,522	4%
	Prince William Sound	365,488	13%	265,240	9%	487,293	14%	371,642	12%	339,476	13%
	North Gulf	333,152	12%	243,652	9%	465,511	14%	367,638	12%	315,339	12%
	Lower Cook Inlet	1,144,726	40%	1,373,539	49%	1,446,760	42%	1,137,390	38%	879,797	35%
	Central Cook Inlet	771,303	27%	702,584	25%	690,728	20%	823,064	28%	672,580	27%
	Kodiak	177,126	6%	158,774	6%	176,746	5%	133,305	4%	220,605	9%
	Charter Subtotal	2,845,355	100%	2,821,884	100%	3,413,089	100%	2,984,766	100%	2,533,319	100%
Non-charter											
	Yakutat	14,695	1%	11,689	1%	20,273	1%	31,666	2%	27,301	2%
	Prince William Sound	287,750	17%	451,318	24%	386,185	18%	287,104	17%	294,712	17%
	North Gulf	123,446	7%	141,712	7%	152,025	7%	139,493	8%	181,255	11%
	Lower Cook Inlet	543,726	33%	493,623	26%	565,845	27%	434,135	25%	454,448	27%
	Central Cook Inlet	488,602	29%	587,416	31%	672,420	32%	546,097	32%	489,616	29%
	Kodiak	207,861	12%	232,585	12%	303,719	14%	278,399	16%	247,408	15%
	Noncharter Subtotal	1,666,080	100%	1,918,343	100%	2,100,467	100%	1,716,894	100%	1,694,740	100%
Total											
	Yakutat	68,255	2%	89,784	2%	166,324	3%	183,393	4%	132,823	3%
	Prince William Sound	653,238	14%	716,558	15%	873,478	16%	658,746	14%	634,188	15%
	North Gulf	456,598	10%	385,364	8%	617,536	11%	507,131	11%	496,594	12%
	Lower Cook Inlet	1,688,452	37%	1,867,162	39%	2,012,605	37%	1,571,525	33%	1,334,245	32%
	Central Cook Inlet	1,259,905	28%	1,290,000	27%	1,363,148	25%	1,369,161	29%	1,162,196	27%
	Kodiak	384,987	9%	391,359	8%	480,465	9%	411,704	9%	468,013	11%
	Total Area 3A	4,511,435	100%	4,740,227	100%	5,513,556	100%	4,701,660	100%	4,228,059	100%



3.2.2.2 Current participation and projected growth

A total of 697 and 692 businesses registered for saltwater guiding in 1998 and 1999 in Area 3A (Table 3.7). A total of 92 and 34 businesses registered in 1998 and 1999 for both Areas 2C and 3A. A total of 596 and 968 vessels registered to provide Area 3A saltwater guide services in 1998 and 1999, an increase of 62% between 1998 and 1999 (Table 3.8). A similar rate of increase in vessels occurred in Area 2C.

3.2.2.2.1 Active businesses

The number of unique active businesses was slightly higher in 1999 at 434 than 1998 at 422 in Area 3A as indicated from the mandatory SSCL (Table 3.13). “Active” is defined as having reported bottomfishing effort on the SCVL. Approximately 96% of registered businesses in both years were owned by Alaska residents as indicated by permanent mailing address.

3.2.2.2.2 Active vessels

The number of unique active vessels was also slightly higher in 1999 at 520 than 1998 at 504 in Area 3A (Table 3.13). Approximately 96% of registered businesses in both years were owned by Alaska residents as indicated by permanent mailing address.

3.2.2.2.3 Clients

A total of 30,255 Alaska residents and 53,519 non-residents were Area 3A saltwater charter clients in 1998. Non-residents comprised between 56% and 93% of saltwater charter clients in Area 3A ports in 1998, with an average of 64% for all ports in the area (Table 3.13). For comparison, non-residents comprised 35% of anglers saltwater fishing from private boats. Some of these clients were also fishing for salmon. Estimates for 1994-97 are not currently available.

Projections

Projected growth for businesses and vessels actively participating in the halibut charter industry is flat, given only two years of logbook data reporting this information. Due to sampling bias, SWHS data for 1994-97 to describe client effort are not currently available. Due to data limitations, no projection of charter client growth is available for the short-term or long-term.

3.2.3 Baseline economic data for charter fishery

Sport fishing provides non-monetary benefits to anglers, and monetary benefits to businesses and individuals linked to the economic activity generated by angler spending. This section will present available data on guided angler expenditures for purposes of approximating regional economic baselines for the halibut charter industry. The role these expenditures play in local and regional economies will be discussed in Section 4. It is also noted that expenditures alone cannot be used to determine value as defined by economists. The non-monetary benefits enjoyed by anglers need to be considered for the estimation of value and net economic benefits; this will also be addressed in Section 4.

Recent and comprehensive economic data for the halibut charter fishery does not exist on an area-wide level, making it difficult to calculate total guided angler expenses and the contributions of fishing-related expenditures to communities with charter activity. A number of studies that examine sportfishing in Alaska have been undertaken; however, these are somewhat dated and some treat several sport fisheries in too aggregate a fashion to distinguish data specific to charter halibut fishing. Following is a brief discussion of relevant studies, some of which were incorporated into the 1997 Council analysis.

Homer, Alaska Charter Fishing Industry Study, Douglas Coughenower, Marine Advisory Bulletin #22, 1986

This description of the Homer charter industry and the characteristics of charter clients is based on surveys of charters and clients done in 1985. The report states that no one knew the number of charters operating out of Homer in 1985. The researcher assumed a universe of 42 and received 7 complete surveys as well as partial information from 15 other companies. Responses were received from 526 clients.

The report of the results provides a useful, although dated, description of the industry. (One of the important developments in the industry since the time of this study was the establishment and growth of the Deep Creek area as a launching point for charter trips.) The quality of the client data is better than that of the charters although both are subject to possible response bias. This study was used to help substantiate other information about the general characteristics of charter operations and clients for the Council's 1997 analysis. The most useful specific information was on client expenditures, length of trip, residence, and type of lodging.

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Table 3.13 Baseline 1998 and 1999 participation, harvest and effort data for halibut charter fishery in Area 3A.

Area 3A Year round Businesses and Vessels								
	1999				1998			
	Resident	Non-Resident	Unknown	Total	Resident	Non-Resident	Unknown	Total
Number of unique active businesses	418	13	3	434	404	14	4	422
Number of unique active vessels	501	18	1	520	480	20	4	504

Area 3A Year Round Resident, Non-resident and Crew															
	1999							1998							
	Resident	Non-Resident	Unknown	Client Total	Crew	Total		Resident	Non-Resident	Unknown	Client Total			Crew	Total
Angler-Days	24,979	54,834	0	79,813	9,053	88,866		31,000	65,634	1,585	98,219				
Rods Fished for Bottomfish	29,895	63,888	0	93,783	10,566	104,349		28,645	59,665	2,657	90,967			947	91,914
Boat Hours Fished	42,587	68,013	0	110,600	19,896	130,496		n/a	n/a	n/a	85,879			n/a	85,879
Halibut Kept	51,291	105,276	0	156,567	12,715	169,282		48,033	103,908	6,957	158,898			1,738	160,636
Halibut Released	42,669	85,293	0	127,962	6,816	134,778		44,797	94,805	7,177	146,779			694	147,473
Pelagic Rockfish Kept	6,486	10,054	0	16,540	313	16,853		5,470	7,740	1,455	14,665			2	14,667
Pelagic Rockfish Released	2,266	5,323	0	7,589	266	7,855		n/a	n/a	n/a	n/a			n/a	n/a
Other Rockfish Kept	2,090	2,417	0	4,507	184	4,691		2,444	3,666	266	6,376			10	6,386
Other Rockfish Released	278	512	0	790	73	863		n/a	n/a	n/a	n/a			n/a	n/a
All Rockfish Released	2,544	5,835	0	8,379	339	8,718		2,672	5,987	497	9,156			5	9,161
Lingcod Kept	1,449	2,547	0	3,996	183	4,179		1,162	2,330	137	3,629			1	3,630
Lingcod Released	1,377	1,563	0	2,940	137	3,077		n/a	n/a	n/a	n/a			n/a	n/a

Jones and Stokes, Surveys for the Alaska Department of Fish and Game

Jones and Stokes conducted resident and non-resident surveys of sportfishing in Southcentral for 1986 and similarly for Southeast Alaska in 1988 for the Alaska Department of Fish and Game. They collected information on expenditures, fishing activity, and attitudes by location. The information was used to estimate the economic impact and net economic value of the recreational fishery. They also collected information from businesses involved in the recreational fishery and guide businesses.

There was no specific information in the survey to allow estimation of the expenditures specifically associated with the halibut charter industry or with the characteristics of the halibut charter industry, either for the clients or for the service providers. The reported results were used to help define the range of average daily expenditures for sportfishing and to obtain information on the characteristics non-residents find important in their Alaskan fishing experience for the Council's 1997 analysis.

University of Alaska Anchorage, Institute of Social and Economic Research, Surveys for the Alaska Department of Fish and Game

Statewide Resident Sportfish Survey

ISER conducted a telephone survey of resident Alaska sport anglers in 1993 for the Alaska Department of Fish and Game. The purpose of the survey was to collect information on the trip, harvest, and expenditure patterns of resident sport anglers. The sample of 1,350 was developed using random telephone screening to identify resident sport anglers who had fished in the previous three years. The sample was designed to be large enough to follow the anglers through the entire season, given the inevitable attrition associated with a series of surveys. The survey design included a preseason survey to collect information on equipment and anticipated trips, monthly trip logs to identify the number and characteristics of trips, and a post season survey to collect trip information, spending information, and to ask policy preference questions.

Information collected on the survey included total expenditures associated with sport fishing, including both fixed expenditures on transportation equipment such as boats, aircraft, and road vehicles, and trip-related expenditures. Fixed expenditures were collected from all anglers and trip-related expenditures from a subset of total trips. Information on the number of trips taken, the month and day of the trip, the target species, and harvest was collected for all trips taken.

Data from this survey provides a point in time estimate of the composition of total sport fishing-related trips in Alaska by residents, the relative importance of trips targeting halibut, the share of halibut trips that are guided, and the harvest rate for halibut trips. This information is available by location. The survey also provides information on the extent halibut anglers are 'avid' or 'casual' anglers. Information on catch and harvest per unit effort is not available because of problems with trip definition.

Statewide Non-Resident Sportfish Survey

ISER conducted a mailout-mailback survey of non-resident Alaska sport anglers in the spring of 1994 for the Alaska Department of Fish and Game. The purpose of the survey was to collect information on the expenditure patterns of non-resident sport anglers. The sample of 7,000 was developed from the 1993 non-resident sport license file and designed to be large enough to get valid subsamples for different categories of non-resident anglers such as those visiting relatives and those on expensive remote fishing trips. The survey had a response rate of 61 percent.

Information collected on the survey included total expenditures associated with visits to Alaska for fishing as well as the composition of expenditures. Information was also collected on the number of specific fishing trips, species targeted, and harvest. Attitudinal information was also collected to measure the important factors influencing the decision to fish and locational preferences.

Expenditure information from this survey provides some information on non-resident expenditures associated with guided halibut trips, but it is of limited value since the sample size is small and respondents had difficulty understanding the concept of a fishing trip independent of their trip to Alaska, so information on origin and destination of trips is of limited value. The survey also provides some insight into the importance of sport fishing in Alaska to non-resident anglers based on their responses to questions about reasons for visiting the state, and the importance of sport fishing in that decision.

Guide Survey

ISER conducted a mailout-telephone survey of Alaska guide and charter businesses in the spring of 1994 for the Alaska Department of Fish and Game. The purpose of the survey was to collect information on the composition of expenditures by guide and charter businesses. The universe for the sample was based on a list provided by ADFG which included businesses that employed individuals who accompanied and directed anglers in sport fishing and businesses that provided transportation services to fishing locations. Consequently its coverage is slightly broader than the definition of a guide used in the ADFG guide registration program. Of the 1983 names on the initial list and contacted, 1178 responded of which 834 indicated they were in the guide and charter business. From this group of respondents 331 detailed interviews were completed.

The survey collected information on business revenues, including the proportion attributable to sport fishing and specific sport fishing-related activities such as guiding transportation and lodging. A major portion of the survey was information on expenditures and employment, including the location of expenditures and the residence of employees. Data was also collected on capital expenditures, equipment owned, location of business, and a general description of the business.

The survey did not collect detailed information on operational characteristics of businesses and no information on the characteristics of clients. Information from the survey is useful for providing a general description of the size and composition of the industry including the size distribution of revenues and value of equipment, and in describing the range of activities that guide and charter businesses are engaged in within Alaska.

Economics of Sport Fishing in Alaska, 1999

Results from the ISER angler and guide surveys have been used to estimate the levels of economic significance, impacts, and value of sportfishing to Alaska in a study being prepared for ADFG. While the data relied upon is not very recent (1993 and 1994 surveys), the report provides the most comprehensive and thorough examination to date of Alaska's sport fisheries. However, treatment of all fisheries, including freshwater and marine, necessitated aggregation of different species and fishing modes (guided and unguided, shoreline and boat) within the modeling process, so that the reported results cannot be used to characterize the economics of the halibut charter fisheries alone.

McDowell Group, Southeast Sportfishing Report for Alaska Trollers Association, 1992

The McDowell group released a short report, The Role of Sport Fishing in the Southeast Alaska Tourism Economy for the Alaska Trollers Association in 1992. This paper relied on survey data collected by the McDowell group for the Alaska Visitor Statistics Program (AVSP). Though the study provides no estimates

of angler expenditures directly attributable to Southeast's sport fisheries, it cites aggregated expenses for visitors who fished. It also attempts to characterize the avidity of Southeast, non-resident anglers, and goes on to critically review the Jones & Stokes (1991) Southeast sportfishing study. Though the paper does not report data that could be used to estimate expenses associated with the guided halibut fishery, it does provide useful information describing the relative importance of fishing for those visitors to Southeast who fished.

University of Alaska Fairbanks, Kenai Peninsula Marine Sport Fishing Studies, 1999

The only relatively recent data collection project known to the authors which allows for separability of halibut charter information comes from a survey compiled by Lee et al. (1999a). The survey, along with an ongoing study by Herrmann et al. (1999) are the results of projects funded by Alaska Sea Grant, the University of Alaska Fairbanks, and the Coastal Marine Institute (University of Alaska/Minerals Management Service). These related studies focus on the marine sport fisheries originating from the Kenai Peninsula. This study has recently undergone a major revision because of discovered and corrected errors in ADF&G SWHS data on which the study relied for effort variables, and the corrected results are at this stage preliminary. Both the baseline angler expenditure data and area wide estimates of expenditure excerpted from the study and reported below apply daily angler expenditures (estimated separately from the SWHS) to logbook estimates of efforts, and are not subject to the SWHS errors.

The Herrmann study further reduces the geographic scope to include only the economic impacts to the western Kenai from the marine sport fisheries of lower Cook Inlet. In the absence of primary or secondary source data for halibut charters area-wide, estimates derived from these studies represent the best available data for approximating expenditures associated with the guided sport halibut fishery. Herrmann's work examines all marine sport fishing, including salmon-related trips, for all fishing modes including fishing from private boats, charter vessels, and shoreline fishing. However, data was collected at a level of resolution fine enough to estimate angler expenditures corresponding only with the halibut charter fishery.

In an attempt to isolate baseline data associated strictly with the halibut charter fishery, expenditure information from the Herrmann study was applied to 1998 and 1999 logbook efforts for bottomfish trips to provide estimates of recent economic activity specific to Cook Inlet in the Council's 2000 EA/RIR/IRFA for the GHL and are excerpted below. This process may also be applied to all of Area 3A for a rough baseline estimate given assumptions regarding the uniformity of client and trip characteristics across 3A.

For Area 2C, these assumptions become untenable for deriving an economic baseline. Differences in clientele and trip characteristics such as angler avidity and travel mode render extrapolation of Cook Inlet results inappropriate for reasons that will be further elaborated. Past studies have characterized the nature of the marine recreational fishery and its anglers in Southeast Alaska, pointing out these differences between 3A and 2C; and though they will be briefly discussed under discussion for 2C, lack of relevant data collection prevents us from forming an appropriate economic baseline for Southeast. Instead, anecdotal information on average charter prices gleaned from discussions with members of industry will be used to the extent practicable to characterize some of the monetary activity associated with the halibut charter sectors in 2C.

3.2.3.1 Angler expenditures

Anglers spend money on a wide range of goods and services to visit a site to sport fish. These costs generally fall into two categories: fishing and non-fishing expenditures. Examples of the former include gear costs such as tackle, charter fees and fishing related apparel, while transportation and daily living expenses make up the latter. Economic impacts are derived from both types of expenditures, although the level of impact attributable to sport fishing will depend on how other reasons for taking the trip rank relative to fishing.

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Table 3.14 Average angler-day expenditures for halibut-only charter trips from the western Kenai Peninsula

	Charter – halibut only	
	Res (\$)	Non-Res (\$)
Auto or Truck Fuel	16.23	9.01
Auto or RV Rental	3.21	12.08
Lodging	22.78	19.23
Groceries	11.62	9.24
Restaurant and Bar	15.12	7.85
Total Transportation and Lodging	78.38	86.97
Charter or Guide	128.08	142.14
Fishing Gear	3.22	20.22
Fish Processing	8.15	42.84
Derby	1.85	2.73
Boat fuel and repairs		
Moorage or haul out		
Total fishing expenditures	141.30	207.93
Total non-fishing day expenditures	68.96	57.41
Total angler-day expenditures	210.26	265.34

Table 3.15 Charterboat effort in Area 3A reported by ADFG logbook data

SWHS area	Region name	1998			1999		
		Res angler-days	Non-res angler-days	Total	Res angler-days	Non-res angler-days	Total
H	Yakutat	172 6%	2,738 94%	2,910 100%	43 2%	1,723 98%	1,766 100%
J	PWS	6,260 54%	5,401 46%	11,661 100%	4,262 50%	4,292 50%	8,554 100%
PN	Kenai Peninsula (W. of Gore Pt.)	16,779 28%	43,700 72%	60,479 100%	13,902 28%	35,332 72%	49,234 100%
PS	Kenai Peninsula (E. of Gore Pt.)	6,254 43%	8,211 57%	14,465 100%	5,624 40%	8,286 60%	13,910 100%
Q	Kodiak	1,525 22%	5,454 78%	6,979 100%	1,142 18%	5,147 82%	6,289 100%
Total		30,991 32%	65,507 68%	96,498 100%	24,974 31%	54,783 69%	79,757 100%

Note: 1999 estimates are preliminary

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For some individuals, angling is an important enough component of the trip that a cancellation in fishing plans warrants a cancellation of the entire trip. Since the trip would not be realized absent the fishing opportunity, all of the trip expenditures can be ascribed to the location's sport fishery. For other individuals, sport fishing may be an ancillary activity on a trip taken for any number of other reasons such as visiting family or friends, business, or a mixed bag of recreational opportunities. In this case, only fishing-related expenditures are directly associated with the sport fishery but non-fishing expenses would occur regardless of whether sport fishing takes place since the visitor would still travel to the region despite a cancellation in fishing plans.

Average angler expenditures for Cook Inlet marine sport fisheries

Applying the average expenditures from Table 3.14 to the angler days from Table 3.15 yields the total expenditures associated with the halibut charter fishery in 1998. These results are presented in Table 3.16 and similar results for 1999 are reported in Tables 3.17. Overall the average daily travel and living expenditures for Alaska and non-Alaska residents were \$44 and \$101, respectively. Fishing costs for Alaska and non-Alaska residents were \$47 and \$138, respectively. The values for Alaska residents were much lower because trips where fishing occurred on private boats and from shore were included in the data as well as charter trips. When the estimates were made for charter trips only, the fishing expenditures for Alaskan (\$141 - the charter itself cost \$128 and processing their catch cost \$8.15) and non-Alaskan (\$208 - the charter itself cost \$142 and processing their catch cost \$42.84) residents were closer to being equal. Additional detail on the cost associated with the halibut charter fishery may be found in the EA/RIR/IRFA developed for the halibut GHL analysis (NPFMC, 2000).

Table 3.16 Total estimated 1998 halibut charterboat expenditures for all residencies fishing in Cook Inlet off the Kenai Peninsula.

	Days	Expenditures				Total
		Fishing (Kenai)	Other (Kenai)	Fishing (Alaska)	Other (Alaska)	
Days Fished	60,499					
Days spent on Kenai ¹	82,670					
Days spent in Alaska ²	47,674					
Auto fuel			931,811		478,675	1,410,485
Auto/RV rentals			-		1,284,507	1,284,507
Lodging			1,681,660		940,930	2,622,590
Groceries			825,495		456,704	1,282,199
Restaurant & Bar			837,209		423,713	1,260,922
Charter		8,363,134				8,363,134
Gear		924,184		13,523		937,707
Processing		2,009,020				2,009,020
Derby		150,379				150,379
Boat Fuel						
Haul/moorage						
Total		11,446,717	4,276,175	13,523	3,584,528	19,320,943

¹ Includes days fished. ² Excludes days spent on Kenai

Effort information from the 1998 and 1999 ADF&G logbooks were then combined with the daily fish expense information. Combining these two sources of information assumes that effort data from one year can appropriately be applied to expenditures from another year. The resulting values indicate that about \$19.3 million were spent as a result of charterboat fishing for halibut in the Cook Inlet off the Kenai Peninsula, during 1998. Of the \$19.3 million, \$4.6 million (24 percent) were spent by Alaskan residents and \$14.7 million

(76 percent) by non-Alaskan residents. About 81 percent of the money spent in Alaska was spent within the Kenai Peninsula. Expenditure estimates for 1999 were similar to those for 1998, because effort estimates from the 1999 log books were similar to those in 1998.

Applications to 3A

Average angler expenditures from the Cook Inlet study were applied to area 3A as a whole, but required some broad assumptions regarding characteristics of the area 3A ports. Ports in area 3A that may well have similar characteristics to the Cook Inlet ports are places like Seward. Charter clients can drive to Seward and it offers the similar living opportunities/cost structures to places like Homer. Yakutat, on the other hand, does not fit as well. Clients would be required to fly into Yakutat to fish, and the cost of living maybe higher. These differences mean that applying the Cook Inlet expense structure to Yakutat may yield misleading results. However, overall it is thought to be reasonable to apply Cook Inlet expenses to charter ports in 3A as a whole, since the Cook Inlet ports (and ports similar to the Cook Inlet ports) make up the majority of charter effort in area 3A.

Fishing expenditures in Cook Inlet attributable to halibut charter fishing were \$15.0 million in 1998 (total expenditures were \$19.3 million). In area 3A as a whole, \$18.0 million was spent on fishing expenditures attributable to the halibut charter fishery.

Estimates of area-wide total expenditures associated with the halibut charter fishery for fishing related costs only can be obtained by applying the average angler fishing expenditures for each residency in Table 3.14 to the total angler days reported for 1998 in Table 3.18. According to logbook estimates of effort for 1998, and under the assumptions for applying 1997 expenditure data for Kenai Peninsula on a regional basis as described above, the halibut charter fisheries accounted for an estimated total of \$18 million worth of fishing related angler expenditures within Alaska in 1998 (Table 3.19). Of this total, Alaskan residents spent an \$4.4 million and non-residents spent nearly \$14 million. These figures should be compared with the total statewide 1998 fishing related expenditures derived from charter fishing off the Kenai Peninsula in Cook Inlet (\$11.5 million).

Applications to 2C

The distribution of clientele residency, between transportation cost to get to the port, reasons for being in the port (vacation versus fishing) are different area 2C and 3A. Each of these factors change the expenditure patterns of charter clients. Because the cost structure of taking a charter trip in area 3A and 2C are thought to be very different, the expenditure information from the Cook Inlet study has not been applied to area 2C.

Some basic information on the cost of a charter trip is presented for area 2C. Those data indicate that the prices paid for a charter trip are higher in area 2C than in 3A. Trips out of Juneau, for example, are reported to cost \$150-\$220 per person (85 percent of the trips are for salmon), with the average trip costing \$180. Half-day trips have been quoted from \$150-\$190 per person, but these trips are likely only for salmon, because of the travel time to reach the halibut fishing grounds. In Petersburg, trips were quoted as costing \$165-\$170 per day.

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Table 3.17 Preliminary total estimated 1999 halibut charterboat expenditures for all residencies fishing in Cook Inlet off the Kenai Peninsula.

	Days	Expenditures				Total
		Fishing (Kenai)	Other (Kenai)	Fishing (Alaska)	Other (Alaska)	
Days Fished	49,234					
Days spent on Kenai ¹	67,332					
Days spent in Alaska ²	38,675					
Auto fuel			761,381		389,117	1,150,498
Auto/RV rentals					1,040,538	1,040,538
Lodging			1,370,873		763,704	2,134,577
Groceries			673,151		370,756	1,043,908
Restaurant & Bar			684,347		344,536	1,028,883
Charter		6,802,659				6,802,659
Gear		747,986		11,191		759,177
Processing		1,626,924				1,626,924
Derby		122,175				122,175
Boat Fuel						
Haul/moorage						
Total		9,299,744	3,489,752	11,191	2,908,652	15,709,339

¹ Includes days fished.² Excludes days spent on Kenai

Table 3.18 Amount of effort for bottomfish in 3A by SWHS area for 1998 and 1999 as reported in ADF&G logbook data

SWHS area	Region name	1998				1999			
		Res angler-days	Non-res angler-days	Total	Percentage	Res angler-days	Non-res angler-days	Total	Percentage
H	Yakutat	172	2,738	2,910	3%	43	1,723	1,766	2%
J	PWS	6,260	5,401	11,661	12%	4,262	4,292	8,554	11%
PN	Kenai Peninsula (W. of Gore Pt.)	16,779	43,700	60,479	63%	13,902	35,332	49,234	62%
PS	Kenai Peninsula (E. of Gore Pt.)	6,254	8,211	14,465	15%	5,624	8,286	13,910	17%
Q	Kodiak	1,525	5,454	6,979	7%	1,142	5,147	6,289	8%
Total		30,990	65,504	96,494	100%	24,973	54,780	79,753	100%

Table 3.19 Estimated 1998 fishing-related expenditures for halibut charterboat fishing for all residencies in Area 3A.

	Angler Days	Fishing Expenditure s
Days Fished	96,494	
Charter		13,279,938
Gear		1,424,279
Processing		3,058,760
Derby		236,157
Total		17,999,134

3.3 Commercial fisheries

As summarized in Williams (1999), halibut are the target of a commercial fishery that has been in existence for over 100 years. The 1990s have seen a dramatic change in the management regime in the U.S. In 1995, the U.S. implemented an Individual Fishing Quota (IFQ) program, in which each licensed fisherman was given a share of the annual catch limit based on the individual's past production. A summary of the Individual Fishing Quota (IFQ) program for the halibut longline fisheries off Alaska can be found in Pautzke and Oliver (1997). It has resulted in much longer seasons, currently March 15 through November 15, compared with 24-hour "derby" fisheries. It has also kept catches within the prescribed limits. U.S. commercial landings in the IFQ program totaled over 51 M lb in 1998. An additional 2 M lb were harvested in the Community Development Quota Program implemented to provide access to this fishery for western Alaskan communities. Bycatch mortality, i.e., the catch of halibut in other groundfish fisheries, is the second largest source of removals from the total Alaska stock, totaling approximately 13 M lb in 1998.

Since 1977, the total commercial fishery catch in Alaska has ranged from 16 to 61 M lb (Figure 3.11), with peak catches during 1987-1989. In the late 1970s, catches were somewhat stable around 17 M lb. Beginning in 1981, catches began to increase annually and peaked in 1988. Peak area catches were 11 M lb in Area 2C (1988); 38 M lb in Area 3A (1988); 11 M lb in Area 3B in 1998; and 9 M lb in Area 4 (1998). Since the peaks of the late 1980s, catches have declined, reaching a low of 44 M lb in 1995. The catch in 1998 (70 M lb) represents an 8% increase over 1997. Most of this increase has occurred in Areas 2B and 3B.

Areas 2C, 3A, and 3B accounted for 72% of the coastwide catch and 89% of the total catch taken from Alaskan waters. Almost half of the total coastwide catch was taken in Area 3A during 1977-1998. The contribution from the GOA has declined in more recent years, with only 68% of the coastwide catch and 84% of the Alaska catch for 1998. While GOA halibut quotas have increased since 1995, quotas in Area 4 rose higher as a result of recent biomass estimates.

Bycatch mortality is the third largest source of halibut removals in Area 2C and 3A, respectively (Figures 3.10a and 3.10b). Halibut discards in the commercial halibut fishery come in the form of: 1) sublegal halibut (halibut <82 cm) which cannot be retained and are therefore released, and 2) halibut of all sizes which are killed when the gear is lost or abandoned. Total coastwide discards averaged 3.3 M lb during 1993-1994 but have since dropped due to substantial reductions in the Alaskan areas. The reduction was likely the result of a change in fishing practices due to the new IFQ program in that area. Fishermen no longer had to race to catch fish during a short 24-hour fishing period, but could fish more slowly and carefully.

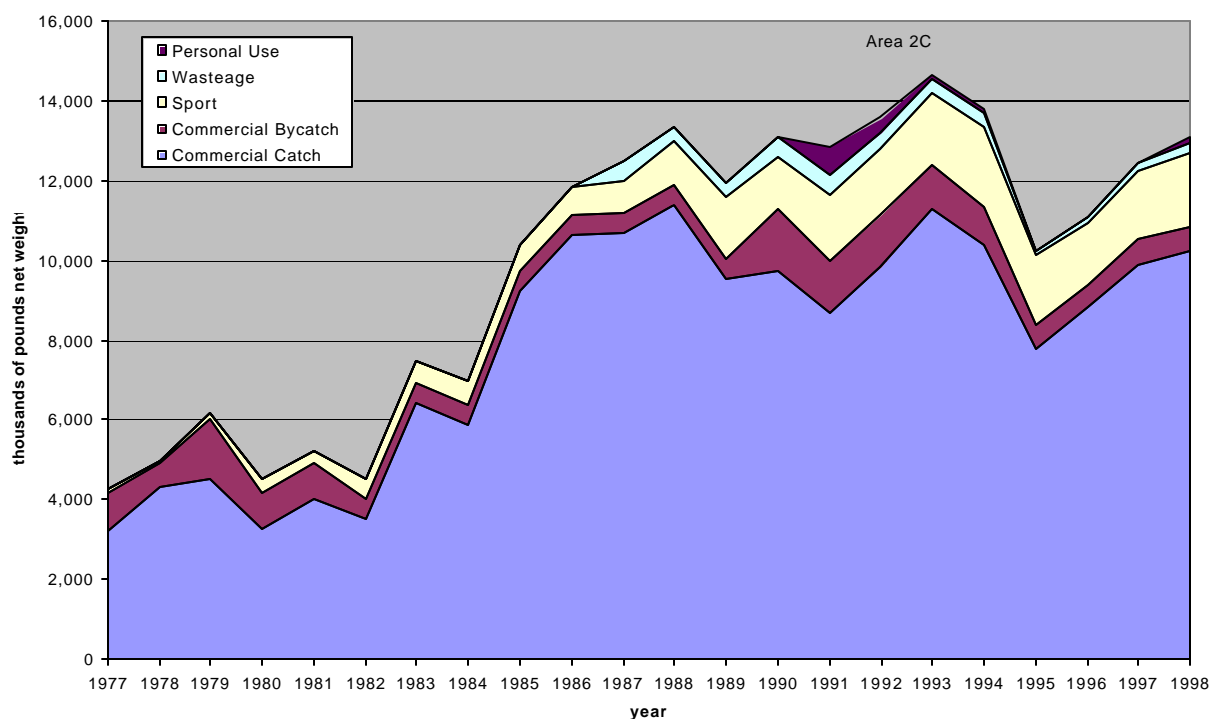


Figure 3.10a. Pacific halibut removals (thousands of pounds, net weight) by category in Area 2C.

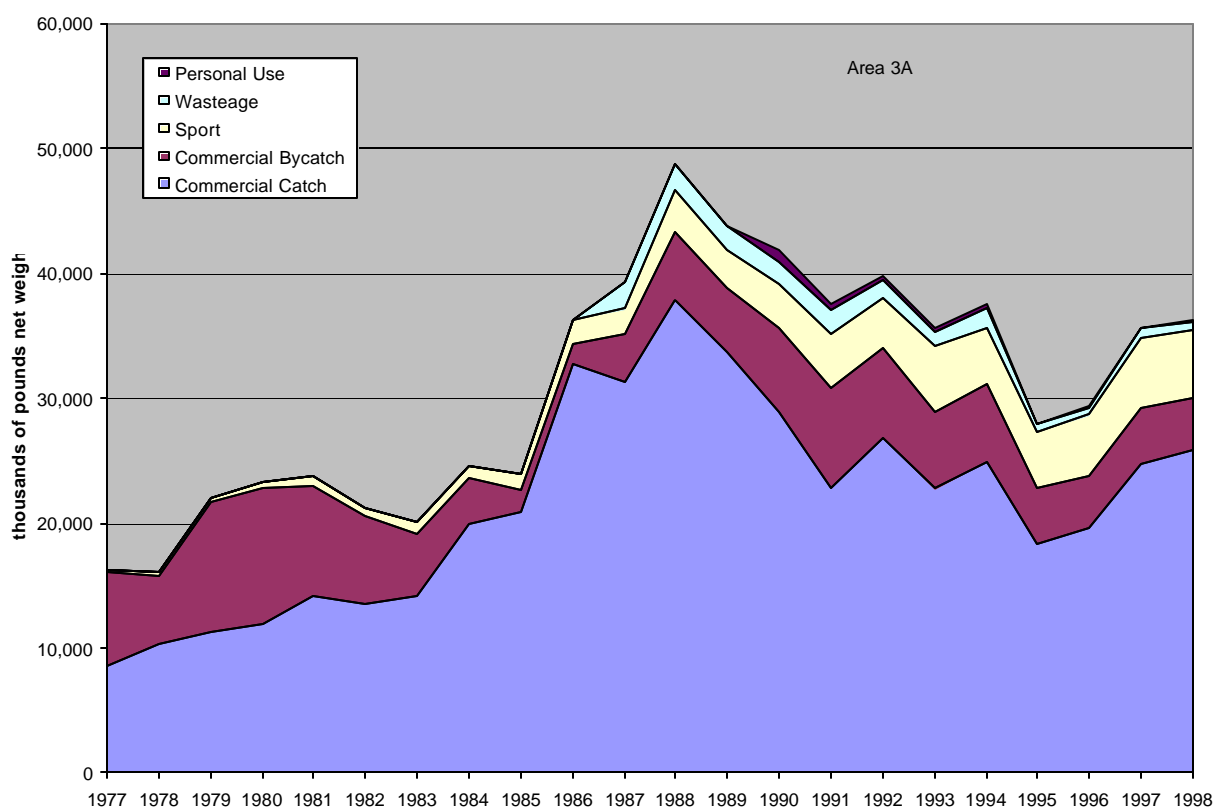


Figure 3.10b. Pacific halibut removals (thousands of pounds, net weight) by category in Area 3A

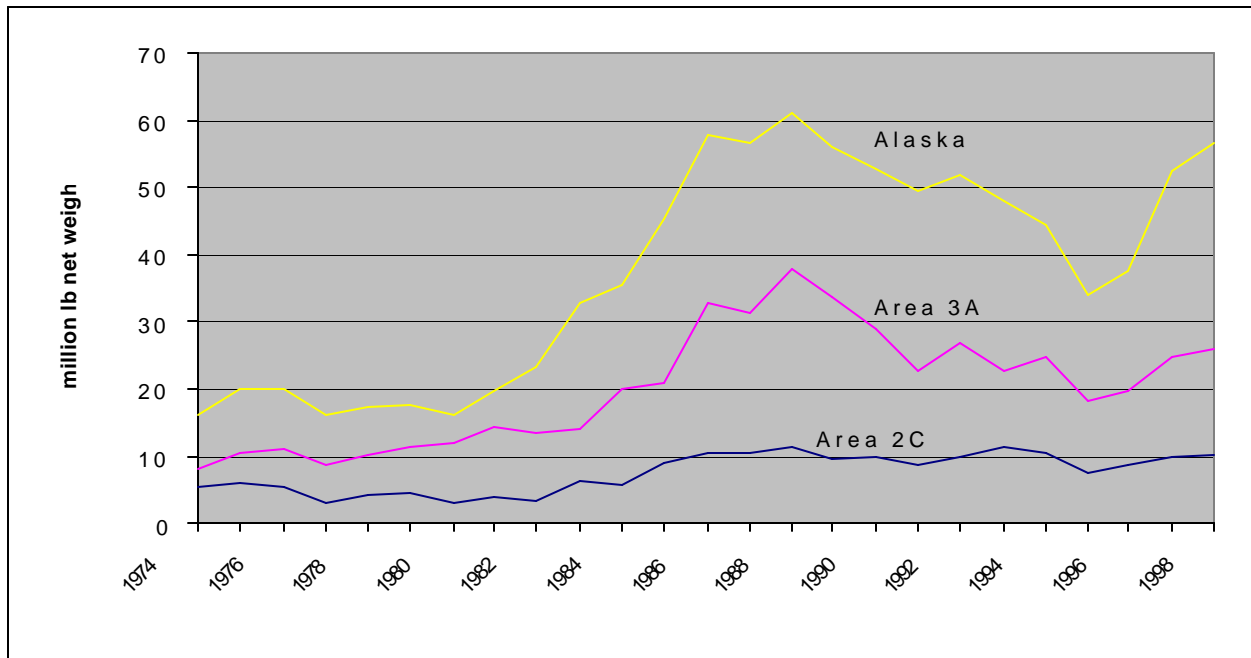


Figure 3.11. Halibut harvest from 1974-98 (million lb net wt.)

Halibut bycatch mortality in the groundfish fisheries was relatively small until the 1960s, when it increased rapidly due to the sudden development of the foreign trawl fisheries off Alaska. The total bycatch mortality (excluding the Japanese directed fishery) peaked in 1965. Bycatch mortality declined during the 1960s, but increased in the early 1970s. By 1985, bycatch mortality had declined to the lowest level since the IPHC began its monitoring nearly 25 years earlier. The late 1980s saw an unexpected increase in bycatch mortality, as the foreign fleets off Alaska were replaced by a growing and unregulated U.S. groundfish fishery.

Overall, since 1992, the bycatch mortality limits, bycatch mortality, and percentage of the limit have declined. The 1998 estimate of 12.8 million pounds is 35% lower than the decadal peak of 20.3 M lb in 1992, which resulted from substantial growth of the U.S. groundfish fishery off Alaska. Using final 1998 landings, less than 94% of allowable halibut bycatch was taken in the BSAI and GOA groundfish fisheries.

Since 1991, NMFS has implemented numerous management measures to reduce halibut bycatch in the groundfish fleet. The Council is considering additional measures that may result in modest changes in bycatch mortality. The Council is preparing a regulatory amendment to develop a halibut mortality avoidance program for the Gulf of Alaska deepwater flatfish and Bering Sea and Aleutian Islands "other flatfish" fisheries. Progress on a vessel bycatch allowance program has been stalled by the press of other business and legal issues. In addition to bycatch limits, gear restrictions and other regulatory changes have been implemented to reduce bycatch and waste. Biodegradable panels are required for pot gear to minimize waste associated with so-called ghost fishing of lost gear. Tunnel openings for pot gear are limited in size to reduce incidental catch of halibut and crabs. Gillnets for groundfish have been prohibited to prevent ghost fishing and reduce bycatch of non-target species. With the implementation of the IFQ system for halibut and sablefish longline fisheries in 1995, bycatch and waste were reduced because the race for fish was eliminated, allowing for more selective fishing practices and significant reductions in actual gear deployment/loss and because halibut bycatch in sablefish fisheries is now largely retained. As a result of the IFQ halibut and sablefish program, the halibut bycatch limit for non-trawl fisheries was reduced by 450 mt in Gulf of Alaska. In June 1998, the Council approved a prohibition on the use of non-pelagic trawl gear for vessels targeting pollock in the Bering Sea and reduced the halibut bycatch limit by 100 mt in 1999. The change in the nature of the Bering Sea

pollock fisheries from open access to cooperatives under the AFA has resulted in a reduction of approximately 0.2 percent (through September 25, 1999).

Another source of mortality is wastage. During the open access fishery prior to 1995, it was not uncommon for fishermen to set more gear than could be hauled back during the short fishing periods. This practice led to the excess gear being cut and discarded when the period closed, despite having fish on the hooks, and was termed abandoned gear. Gear is also lost due to weather. Additionally, setline gear often becomes snagged or caught on the ocean bottom and breaks, and is lost with fish on the hooks, despite efforts by fishermen to retrieve the gear. IPHC staff estimate the amount of mortality due to lost and abandoned gear from effort data in fishermen's logbooks. The results showed that the waste from lost and abandoned halibut gear was 1.1 M lb in 1993 and increased to 1.7 M lb in 1994, primarily due to increases in Area 2C and 3A. Since the inception of the IFQ fishery in 1995, discards from lost and abandoned gear have averaged approximately 441,000 lb annually, probably in response to the slower fishing made possible under the IFQ system and the opportunity to recover any gear which might become lost. Bycatch mortality peaked during this period. Decreases occurred in all areas, but Area 4 exhibited the largest decrease. Discards have increased since 1996, probably due to increases in overall catches.

The Halibut IFQ Program Basics

The purpose of the following summary is to describe the commercial IFQ fishery and document and analyze changes that have occurred during the first four years of the halibut IFQ program. The following excerpt of the executive summary of a report prepared by the CFEC (Dinneford et al. 1999) is included with permission of the authors. It is restricted mainly to topics that can be addressed using NMFS-RAM administrative and harvest data.

In 1995, the NMFS-Alaska Region (AK) implemented an Individual Fishing Quota (IFQ) program for management of the "fixed gear" sablefish and halibut fisheries off Alaska. Quota shares (QS) are the basic use-privileges under the halibut IFQ program. QS were issued to qualified applicants who owned or leased a vessel that made legal fixed gear landings of halibut at any time during 1988, 1989, and 1990. Regular QS units were equal to a person's qualifying pounds for an area. Qualifying pounds for an area were the sum of pounds landed from the person's best five years of landings over the seven-year period from 1984 to 1990.

The QS that were issued are specific to one of eight halibut management areas and one of four vessel categories. The IFQ management areas are defined by the International Pacific Halibut Commission (IPHC): 2A, 3A, 3B, 4A, 4B, 4C, 4D, and 4E. The four vessel categories include a harvester-processor vessel category (also termed "freezer" herein) and three catcher vessel categories. The three catcher vessel categories are "35 feet or less," "36 to 60 feet," and "greater than 60 feet."

A person's annual IFQ for an area is determined by multiplying their fraction of the total QS units in the area's QS pool by the total allowable catch (TAC) that was allocated to the area's IFQ fishery. Adjustments for the person's underages and/or overages from the previous year are then made to determine the person's final IFQ for the year.

In Areas 4B, 4C, 4D, and 4E portions of the total allowable catch (TACs) were allocated to Community Development Quotas (CDQs) for communities in western Alaska. In Area 4E the entire TAC was allocated to CDQs and there has been no IFQ fishery. The Council compensated QS holders in the CDQ areas for the reductions in TAC due to CDQs by issuing them "CDQ compensation QS" in non-CDQ areas 2C through 4A.

The QS that were issued are permanently transferable and leasable, albeit with many restrictions that are discussed in the full report. The Council wanted to achieve some of the benefits associated with IFQ management but they were concerned that the program not lead to radical changes that would hurt communities dependent upon the fishery. As a result, the Council adopted several complex rules in an effort to constrain the changes that could occur under the program. Program specifics are also provided in Appendix II.

The topics covered in the project include basic data on the extent of consolidation of QS holdings since the beginning of the program, the volume of permanent QS transfers and the price of QS units, and the volume of seasonal QS lease transfers and the price of IFQ leases. The report also includes detailed summary data on permanent transfers, including the amount of QS transferred as sales, gifts, and trades; the relationships between the transferors and transfer recipients; and the finance methods used in sales transfers.

Topics examined include the amount and percentage of “blocked” QS as opposed to “unblocked” QS, the distribution of Community Development Quota (CDQ) compensation QS, the use of “swaps” of certain CDQ compensation QS across catcher vessel categories, and the use of a provision allowing for the “sweep-up” of small QS blocks to create larger QS blocks.

A concern of some persons is that the IFQ program might result in a radical change in the geographic distribution of QS holdings. The report provides an extensive examination of changes in the geographic distribution of QS holdings during the first four years of the program. Changes in the distribution of QS holdings are examined by state of residence, by Alaska census area, and by special resident-type designators that classify communities as “local” or “nonlocal” to IFQ management areas and as “rural” or “urban.”

Other QS distribution questions are also examined. These include changes in the distribution of QS by person-type, changes in the distribution of QS between initial QS recipients and new entrants, and changes in halibut harvest and delivery patterns during the first four years of the IFQ program. The report also contains information on the consolidation of IFQ permit holders onto single vessel operations and the underharvest of IFQ during the 1995 to 1998 seasons.

Much of the information in those reports were summarized in the 2000 GHF EA/RIR/IRFA and are essentially unchanged as of the date of the preparation of this document. Therefore, this information is included by reference.

Current commercial harvest levels and projected growth

Area 2C has the second largest commercial halibut quota in Alaska. Peak Area catches occurred in 1988 at 11 M lb. Since the beginning of the IFQ fishery, Area 2C halibut harvests have ranged between 7.5 and 10.0 M lb. During 1999, the 10 M lb quota was landed in 24 ports. Eighteen were located in Alaska and accounted for 96 percent of Area 2C landings. Four were located in Washington state, one in Oregon, and one in Canada. In total, 3,451 separate halibut landings were made by vessels harvesting Area 2C halibut in 1999.

Area 3A has the largest commercial halibut quota in Alaska. Since the beginning the IFQ fishery, Area 3A halibut harvests have ranged between 18 and 26 M lb. The Area 3A quota peaked in 1988 at 38 M lb. During 1999, the 25 M lb quota was landed in 31 ports. Twenty-three ports were located in Alaska and accounted for over 96 percent of the landings. Five were located in Washington state, two in Oregon, and one in Canada. In total, 3,074 separate halibut landings were made by vessels harvesting Area 3A halibut in 1999.

Current commercial participation

A total of 1,734 persons held quota share (QS) in Area 2C at the end of 1998, down 27% from initial issuance in 1995 (2,386 persons). More than half of Area 2C QS holders hold QS in amounts #3,000 (1998) lb. The number of shareholders decline with increasing size of QS: 28%, 15%, and 4% hold QS between 3-10 thousand lb, 10-25 thousand lb, and > 25 thousand lb, respectively.

The majority of consolidation has occurred in persons holding less than 3,000 lb of quota. A reduction of about 500 QS holders (about one-third of the initial recipients) has taken place in that class from the time of initial issuance through 1998. The number of persons holding more than 3,000 lb of halibut quota has tended to remain more stable. However, the overall trend is for the number of persons in the smaller classes to shrink with the larger classes remaining stable or increasing. Some consolidation of QS was expected when the IFQ program was approved. However, the Council did implement measures to ensure that small participants remained in the fishery. Those measures appear to have been successful.

A total of 2,348 persons held QS in Area 3A at the end of 1998, down 23% from initial issuance in 1996. Approximately half of Area 3A QS holders hold QS in amounts #3,000 (1998) lb. The number of shareholders decline with increasing size of QS: 22%, 16%, and 13% hold QS between 3-10 thousand lb, 10-25 thousand lb, and > 25 thousand lb, respectively.

About 82 percent of Area 2C QS holders are Alaska residents who hold about 84 percent of the halibut quota in 2C. The remaining QS is held by residents of 18 other States or Canadian residents. Seventy-six percent of QS holders that were not initially issued QS for halibut are Alaskan residents, as of year-end 1998, with the remaining 24 percent being non-residents. Nearly 15% of Area 2C QS were held by crew members. This indicates a fairly high rate of "buy-in" to the fishery by Alaskan residents. A small amount of acquired QS has been purchased by crewmen.

About 79 percent of Area 3A QS holders are Alaska residents; they held 64 percent of the Area 3A QS. Washington residents held over 24 percent of the QS, while only accounting for 12 percent of the people holding QS. Oregon residents held over 7 percent of the QS. Seventy-two percent of Area 3A QS held by non-initial recipients of quota are Alaskan residents, with the remaining 28 percent held by non-residents.

A total of 836 vessels landed IFQs in Area 2C at the end of 1998. Consolidation has been occurring, with 1998 vessels down 24 percent from initial issuance and 53 percent from 1992. More than half of all vessels participating in the halibut IFQ program landed IFQs in Area 2C. A total of 3,118 landings were made by the vessels operating in Area 2C during 1998. On average, each vessel made about 3.7 landings. The 3,118 landings in Area 2C accounted for approximately 44 percent of all landings in the 1998 halibut fishery.

A total of 899 vessels landed IFQs in Area 3A during 1998, down 47 percent from initial issuance and 53 percent from 1992. Approximately 56 percent of all vessels participating in the halibut IFQ program landed IFQs in Area 3A. A total of 2,919 landings were made from fish harvested in Area 3A during 1998. Area 3A accounted for approximately 41 percent of the number of statewide halibut landings.

Catcher/sellers were the most common type of buyer permit issued in Area 2C. However, only 54 of the 587 catcher/seller permits were used to purchase halibut in 2C. The next largest category was shoreside processors. A total of 128 shoreside processor permits were issued for all of Alaska and 30 permits were used to purchase halibut in Area 2C.

Only 208 of the 859 registered buyer permits were used to purchase halibut in Area 3A during 1998. Most of the buyers that did purchase Area 3A halibut were in the catcher/seller (129 buyers) and shoreside processor (61 buyers) categories. No other category had more than seven active buyers in 1998.

Please refer to Dinneford et al. (1999) for detailed information on:

- Consolidation of QS Holdings, 1995 - 1998
- QS Transfers and QS Prices
- Halibut QS Leases
- Types of QS Transfers, Financing of Transfers, Relationships Between Transferors and Transfer Recipients, and Use of Brokers
- Distribution of QS by Blocking Factor, CDQ Compensation QS, and CDQ Compensation QS Swaps
- "Sweep-ups" of Small QS Blocks
- Changes in QS Holdings by Type of Person
- Distribution of QS by State of Residence
- Changes by Management Area, Rural-Urban, Local-Nonlocal
- Distribution of Halibut QS by Census Area
- New Entrants in the Fishery
- Changes in Harvest and Delivery Patterns
- Overharvest and Underharvest of IFQs and TACS
- Consolidation of IFQ Permit Holders on Vessels

Please refer to NMFS (2000) and (in prep.) for detailed information on IFQ program performance in terms of harvest and participation by regulatory area and participant type (i.e., person, vessel, and buyer) for the 1999-2001 fishing seasons.

3.3.1 Background economic information on the commercial halibut fishery

3.3.1.1 Halibut landings

Since 1995 the commercial halibut fishery has been managed under the Individual Fishing Quota (IFQ) program. That program allows holders of halibut QS to harvest their allocation of the TAC anytime between March 15 and November 15. The amount of halibut landed by an individual is reported to the Restricted Access Management (RAM) division of NMFS. RAM then tracks the catch of each QS holder to make certain the TAC is not exceeded, and that only eligible QS holders are making the landings. The data collected by RAM has been used in previous sections of this chapter to report halibut landings by Area, month, and port. Information was also reported on the number of persons and vessels that fished halibut, and the amount of quota they held. A discussion of the number of entities that purchased halibut was also provided.

3.3.1.2 Ex-vessel prices

Ex-vessel price is the amount fish harvesters are paid for their catch by processors or buyers. Ex-vessel prices reported in this section include both regional prices and statewide averages. Statewide averages will mask price differentials paid at different ports. However, the demand model used later in this analysis is based on coastwide information, and elasticities will be derived from the coastwide demand curve.

Even though statewide price estimates are used later in this analysis, it is acknowledged that prices may differ from port to port for a variety of reasons including competition among buyers, transportation costs, and the product forms that can be produced by processors in the area. For example, ports located in the Cook Inlet

area are relatively close to fishing grounds and have road access to the large urban centers of the state and the Anchorage airport. That means they may have markets for their product in Anchorage as well as a means to reliably ship fresh fish to other parts of the country. Their geographic location, being close to the fishing grounds and transportation centers for moving product, may enable them to pay a higher ex-vessel price compared to other Area 3A ports without access to ground transportation. (Ex-vessel price data derived from CFEC gross earnings files indicate Cook Inlet prices are typically 5-8 cents/pound higher than Kodiak, while processors in the larger 2C ports typically pay about the same price as Cook Inlet processors). These relative price differences among ports may impact where harvesters deliver their fish, and therefore the statewide average price. (Table 3.20)

Table 3.20: Ex-vessel halibut prices, 1992-98

Port	Year						
	1992	1993	1994	1995	1996	1997	1998
Juneau/Yakutat	\$0.98	\$1.23	\$1.97	\$2.01	\$2.23	\$2.24	\$1.31
Ketchikan	\$0.99	\$1.25	\$2.01	\$2.03	\$2.25	\$2.24	\$1.37
Petersburg/Wrangell	\$0.99	\$1.25	\$2.01	\$2.03	\$2.25	\$2.24	\$1.50
Sitka	\$0.99	\$1.25	\$2.01	\$2.03	\$2.25	\$2.24	\$1.22
Prince William Sound	\$0.94	\$1.17	\$1.88	\$1.97	\$2.26	\$2.25	\$1.48
Cook Inlet	\$0.98	\$1.22	\$1.90	\$2.03	\$2.26	\$2.17	\$1.42
Kodiak	\$0.91	\$1.18	\$1.90	\$1.95	\$2.20	\$2.08	\$1.22
Statewide	\$0.98	\$1.25	\$1.94	\$2.03	\$2.24	\$2.15	\$1.26

Source: CFEC Gross Earnings files, 1992-97. Commercial Operator Annual Report data, 1998

A literature review of previous works conducted to study the relationship between ex-vessel revenue and quota was done by Herrmann (1999). Many of those studies cited were published prior to implementation of the Alaska IFQ program, so the structural changes resulting from the Alaska IFQ program would not be captured in the results of the earlier studies. The issue of price/quantity relationships will be further developed in Chapter 4. However, a summary of previous work in Herrmann's study indicates that the price flexibility of halibut is less than 1 (in absolute value), meaning that the market could absorb increases in commercial harvest without decreasing revenues.

3.3.1.3 Ex-vessel revenue

Ex-vessel revenue was calculated by multiplying the statewide average ex-vessel price by the quantity of fish sold. Table 3.21 reports the results of those ex-vessel revenue calculations for the years 1995-98 by area of harvest and delivery. Results reported in the table show that over 93% of the ex-vessel revenue of halibut harvested from Area 2C was generated from sales to 2C buyers during the years 1995-99. At least 70% of the halibut ex-vessel revenue generated from fish harvested in 3A came from deliveries to buyers in 3A ports in each year 1995-99. The percentages were lower in 3A because some 3A fish were being delivered to 2A ports (likely by freezer boats) and to Area 2C. While the reason 12-14% of 3A halibut was delivered in 2C is not certain, it may be a result of vessels fishing 2C and 3A quota on the same trip or vessels homeported in 2C fishing 3A quota. In any case, more 3A halibut are landed in 2C than the opposite.

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The estimated gross revenue generated from halibut harvested in 2C ranged from \$12.2 million in 1998 to almost \$20.8 million in 1997 (these values have not been adjusted for inflation). Lower gross revenue in 1998 is primarily attributed to the low ex-vessel price that year, since the quantity harvested was about the same both years.

Ex-vessel gross revenues in 3A showed a similar trend to those in 2C across years. Revenues were largest in 1997 (\$52.3 million) and lowest in 1998 (\$31.1 million). Once again the gross revenue change at the ex-vessel level between those years was primarily a result of lower prices in 1998.

Table 3.21: Ex-vessel revenue of IFQ halibut caught in Areas 2C and 3A by Area of delivery

Area Caught	Area Landed	95		96		97		98		99 (as of 11/10)	
		\$	%	\$	%	\$	%	\$	%	\$	%
2C	2A	576,899	3.7	650,751	3.4	481,881	2.3	343,092	2.8	509,774	2.8
	2B	412,706	2.6	610,123	3.2	178,922	0.9	318,177	2.6	241,414	1.3
	2C	14,727,051	93.3	17,820,100	93.1	19,994,964	96.2	11,474,344	94.0	17,578,730	95.6
	3A	60,768	0.4	68,745	0.4	123,584	0.6	66,585	0.5	54,747	0.3
2C Total		15,777,424	100.0	19,149,719	100.0	20,779,351	100.0	12,202,198	100.0	18,384,664	100
3A	2A	4,177,262	11.5	5,560,105	12.8	5,547,925	10.6	3,281,134	10.5	2,864,697	6.4
	2B	570,933	1.6	826,593	1.9	309,735	0.6	402,312	1.3	138,820	0.3
	2C	4,516,130	12.4	6,393,858	14.7	7,751,318	14.8	4,372,485	14.1	5,723,355	12.7
	3A	26,885,705	73.9	30,411,799	70.0	38,720,602	74.0	23,011,816	74.0	36,186,292	80.6
	3B	197,499	0.5	209,818	0.5		0.0	15,078	0.0	887	0.0
	4A	2,968	0.0	54,233	0.1	9,264	0.0	33,164	0.1	1,777	0.0
At-sea		43,885	0.1								
3A Total		36,394,381	100.0	43,456,406	100.0	52,338,845	100.0	31,115,990	100.0	44,915,827	100

Source: NMFS RAM division data were used for quantities; prices estimated using CFEC gross revenue files.

3.3.1.4 First wholesale prices

First wholesale prices are the prices that the first processor of halibut receives for the products they make from halibut delivered by fish harvesters. Often a wide variety of products are produced from a species of fish. The number of products produced from halibut are primarily fillets, head and gut (H&G), and cheeks. The price of products depends on a variety of factors and may show substantial variation between years. First wholesale prices for the 1997 and 1998 are reported in Table 3.22. 1998 statewide average prices were considerably lower than those reported for 1997. It is unlikely that the increase in amount of halibut harvested in 1998 versus 1997 accounted for all of the decrease in price. Recall from the previous section that ex-vessel price flexibility has generally been estimated to be less than (1) in absolute value. Therefore, other market conditions, such as a weak Asian economy and the availability of cheaper substitute products, likely contributed to the decline in first wholesale price.

Table 3.22: Statewide average first wholesale prices for halibut products, 1997-98.

Product	1997	1998
Deep skin fillets	\$3.22	\$2.90
Fillets no skin/ribs	\$4.92	\$3.97
Headed & Gutted	\$2.67	\$1.91
Headed & Gutted, Western cut	\$2.79	\$2.14
Average of All Products*	\$2.77	\$2.05

Source: ADFG, Commercial Operator Annual Reports (COAR)

* Includes products that are not reported in the list above.

Additional information on historic halibut product prices by area can be found in Knapp (1997). It provides product prices for the years 1984-95 by area and whether the product was fresh or frozen. As expected, those data indicate that much more halibut was sold frozen than fresh during that period. This is likely due to the short fishing seasons resulting in a small window of opportunity for selling a fresh product. The statewide average fresh price was also lower than the frozen price during many of the pre-IFQ years. A lower fresh price may have been the result of the glut of halibut reaching the fresh market at one time. On the other hand, sales of frozen product sales could be spread out over the entire year, providing better marketing opportunities.

After the implementation of the IFQ program, a relatively higher percentage of halibut was sold into the fresh market. For example in 1997, about one-third of all halibut was sold fresh. The head and gut price for fresh halibut was \$2.74 (84% of total fresh production), based on 1997 COAR data, and the frozen price was \$2.64 (73% of total frozen production). Better fresh prices and a longer season may have contributed to the increase in fresh production. The year prior to the IFQ program (1994), only 15% of halibut at the first wholesale level was sold fresh.

3.3.1.5 First wholesale revenue

First wholesale revenue is the value the first processor of halibut derives from their production. Table 3.23 reports the first wholesale value by area for the years 1990-98. These values were derived from the Commercial Operator Annual Reports. These reports are filed annually by processors and include information on the amount and value of fish processed. The gross revenue estimates indicate that the majority of halibut are processed in the Southeast and Southcentral areas of Alaska. These are the Areas (2C and 3A) that would be directly affected by consideration of the GHL for the charter fleet.

3.3.1.6 Quota Share Value

The value of a unit of QS is well documented in reports produced annually by the Commercial Fisheries Entry Commission (CFEC). The most recent report contains information on the value of QS that were sold or leased during the years 1995-98 (CFEC 1999). That report converts the value of QS that were transferred to value in pounds of IFQ by area. This conversion was done to standardize the value of a QS. Those prices ranged from a low of \$5.03 in Area 4B in 1996 to a high of \$11.37 for 2C in 1997. In general, QS prices increased from 1995-97 in Areas 2C and 3A, but then fell in 1998. This fall in QS prices reflects a similar decrease in ex-vessel halibut prices harvesters received in 1998. Table 3.24 reports the mean price and the standard deviation for QS transfers in Areas 2C and 3A during 1995-98.

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Table 3.23: First wholesale revenue of halibut (in \$ million) by area, 1990-98.

Area	1990	1991	1992	1993	1994	1995	1996	1997	1998
Ketchikan/Craig/Klw	\$5.0	\$3.9	\$1.5	\$3.3	\$2.9	\$2.5	\$3.0	\$3.4	\$2.4
Petersburg/Wrangell	\$6.9	\$8.1	\$6.8	\$7.9	\$7.1	\$8.3	\$10.9	\$11.0	\$7.5
Sitka/Pelican	\$13.1	\$9.9	\$7.0	\$0.8		\$12.7	\$11.9	\$10.4	\$7.2
Juneau/Yakutat	\$7.8	\$7.8	\$4.6	\$4.9	\$6.7	\$6.1	\$26.6	\$13.9	\$10.0
Prince William Sound	\$6.3	\$5.1	\$5.8	\$6.6	\$4.6	\$4.3	\$2.9	\$5.2	\$3.5
Cook Inlet	\$21.5	\$23.2	\$16.3	\$15.8	\$18.5	\$11.7	\$30.5	\$20.4	\$22.7
Kodiak	\$27.9	\$30.7	\$18.6	\$14.8	\$21.3	\$14.2	\$19.3	\$28.5	\$17.1
Dutch Harbor	\$6.3	\$7.2	\$22.8	\$7.2	\$6.5	\$10.1	\$8.3	\$10.2	\$9.0
Chignik			\$1.7				\$0.4	conf.	conf.
Alaska Peninsula		\$7.5					\$2.9	conf.	conf.
Bristol Bay							\$0.8	conf.	conf.
Statewide	\$101	\$108	\$91	\$70	\$85	\$76	\$125	\$130	\$93

Source: Commercial Operator Annual Reports, 1990-98

Table 3.24: Transfer prices for IFQ (pounds of halibut) and QS in Areas 2C and 3A, 1995-98

Area	Year	Mean Price \$/IFQ	Stan Dev Price \$/IFQ	Mean Price \$/QS	Stan Dev Price \$/QS
2C	1995	\$7.58	\$1.21	\$1.14	\$0.18
	1996	\$9.13	\$2.71	\$1.37	\$0.41
	1997	\$11.37	\$2.53	\$1.92	\$0.43
	1998	\$10.14	\$2.11	\$1.79	\$0.37
3A	1995	\$7.37	\$1.44	\$0.79	\$0.15
	1996	\$8.40	\$4.07	\$0.90	\$0.44
	1997	\$9.78	\$2.45	\$1.32	\$0.33
	1998	\$8.55	\$3.04	\$1.20	\$0.43

Source: RAM Transfer data reported in CFEC's 1999 IFQ report.

3.3.1.7 Commercial Fishery Costs

Information on the costs associated with harvesting halibut in the commercial fishery is very limited. An engineering/key informant approach was used to estimate harvesting costs for the 1996 commercial halibut fishery in the original GHL analysis (Council 1997). To our knowledge, no formal surveys of the costs associated with commercial halibut fisheries have been conducted since that study was completed. Therefore the information reported in the 1997 document may still be considered the best information available. A summary of the information developed for the 1996 fishery is provided in this section.

In the 1997 study, costs were broken down by vessel class because different class vessels are assumed to use different types of longline gear (Table 3.25). For example, freezer longline vessels "A" class were assumed to use heavier groundlines. Thicker ropes cost more. The replacement groundlines for "A" vessels were assumed to cost \$700, hooks and snaps \$0.20, and gangions \$0.175. Groundlines for the "D" class vessels, we assumed were using snap-on gear, cost \$100. The freezer vessels were also assumed to use squid for bait and auto baiters. Squid was assumed to cost \$0.80 per pound, and each pound of squid was used to bait 11.19 hooks. Therefore, each skate would require \$7.15 worth of bait (squid) to set.

Table 3.25: Cost Assumptions by IFQ Vessel Class

Vessel Class	Bait Used	Bait \$/lb	Hooks Baited/lb	Bait \$/Skate	Skate Type	Ground-line	Hooks/Snaps	Gangions	Gas \$/Gal	Diesel \$/Gal.
A	Squid	\$ 0.80	11.19	\$ 7.15	Auto	\$ 700.00	\$ 0.20	\$ 0.175	\$1.33	\$ 1.17
B	Squid/Herr.	\$ 0.63	8.93	\$ 7.00	Fixed	\$ 200.00	\$ 0.20	\$ 0.175	\$1.33	\$ 1.17
C	Herring	\$ 0.45	6.67	\$ 6.75	Fixed	\$ 175.00	\$ 0.20	\$ 0.175	\$1.33	\$ 1.17
D	Herring	\$ 0.45	6.67	\$ 6.75	Snap	\$ 100.00	\$ 0.30	\$ 0.175	\$1.33	\$ 1.17

Source: Key informant study taken from 1997 GHL Analysis (Council, 1997)

Bait costs were calculated multiplying the total number of skates set by the bait cost per skate. "A" class vessels set 4,091 skates and bait costs were \$7.15 per skate. The product of these two numbers is \$29,238. This is total amount spent on bait for the 4,091 skates set.

Fuel was assumed to cost the same for each vessel class. This assumption simplified the analysis but may not hold true in real life. The dock price for fuel has a complex structure. Price breaks are given for purchases of various quantities. These discounts change by port. For example, Homer may have the first price break at 100 gallons, while in Dutch Harbor it may be 5,000 gallons. The price structure is designed around the fleet that the fuel dock services, and because the boats in Homer are smaller, the price breaks are set at lower quantities. Fuel usage in gallons per hour was assigned to each vessel fishing halibut in 1996. The vessel registration files also report whether the engine burns gas or diesel. Using this information vessels were grouped by length class. An engine was then assigned to each length class based on the average for the class.

The fuel usage was based on a specific engine selected to represent vessels in that length class. The engine was assigned by calculating the average horsepower in that class and selecting a representative engine for that level of horsepower. The "engine used as proxy" lists the engine that was assigned to the vessels in each length class. The manufacturer's data on the engine's fuel usage at various RPMs was then used to represent three fishing activities. The "High RPM" field indicated the fuel used when running to and from the fishing grounds. "Medium RPM" is the fuel consumption when the vessel is setting and retrieving gear. This is the column that will be used to calculate fuel usage in this analysis. The "Low RPM" field represents

the fuel used when the engine is at idle. This level of fuel usage is expected when the vessel is not in gear and no fishing activities are being conducted (i.e., the crew is sleeping while the gear is soaking).

The analysis assumes that a skate is lost after 70 soaks in the "A" class, 75 soaks in the "B" class, 80 soaks in the "C" class and 85 soaks in the "D" class. Smaller vessels were thought to lose less gear because they are generally fishing in shallower water and there is less stress placed on the gear. Larger vessels also tend to have more horsepower. So when a longline gets snagged on the bottom, the power of the vessel is more likely to break the line.

Groundline replacement costs are calculated by multiplying the total number of longlines lost or destroyed by the cost to replace a groundline. Replacement of 2.43% of the class "A", 2.33% of the class "B", 2.25% of the class "C", and 2.18% of the class "D" hooks and snaps was assumed to be required each year. These percentages are based on the assumption that one hook is lost from every skate set, and that all hooks are lost when a skate is lost. The cost to replace these hooks and snaps can be calculated by multiplying the total number of hooks set by the percent replaced each year and then multiplying that result by the hook replacement cost. For vessels in the "A" class the math is:

$$4,091 \text{ skates} * 100 \text{ hooks/skate} * .0243 * \$0.20/\text{hook} = \$1,988.$$

This analysis assumed that all lost gangions need to be replaced as well as two gangions on every skate set. The replacement rate for gangions is equal to 3.43% in the "A" class, 3.33% in the "B" class, 3.25% in the "C" class, and 3.18% in the "D" class vessels. Using the same formula listed for class "A" vessel hook replacement cost, but substituting \$0.175 as the gangion price and 0.0343 as the gangion replacement rate yields a cost of \$2,456.

A summary of the estimated costs associated with setting and retrieving gear from the 1997 study are listed in Table 3.26. The table shows the estimated costs for gear, fuel, and bait for each vessel category.

Costs associated with the shipping and processing of halibut were also estimated in the 1997 Council analysis. Table 3.27 reports those estimates. Total processing costs were estimated to be \$0.30 per pound for fresh fish and \$0.50 per pound for frozen. These costs were then divided between labor, overhead, and packaging costs. Costs for shipping were estimated using information from shipping firms. Subtracting the estimated costs from the gross margin (first wholesale minus ex-vessel prices) yields a profit/administrative overhead estimate. Gross margins ranged from \$0.89 to \$0.97 in Areas 2C and 3A. Profit and Administrative overhead ranged from \$0.13 to \$0.35 per pound in 2C and 3A.

Cost estimates for both harvesters and processors provided in this section should be viewed cautiously for two reasons. Firstly, the information is dated. These projections were made over two years ago and any changes that have occurred during that period would not be accounted for in the data. Secondly, there was unquantifiable uncertainty associated with the original projections. These estimates were made using key informants and not a formal survey. Therefore, it was not possible to analyze variation among the responses or compare the responses to actual costs.

Table 3.26: Estimated Costs to Set and Retrieve Skates in 1996.

IFQ Vessel Class	Data	Total
A	Total Skates Set/Retrieved	4,091.10
	Physical Skates Used	47.05
	Total Skate Setting/Retrieving Cost	\$106,790.00
	Fuel Cost Setting/Retrieving Skates	\$32,200.00
	Bait Cost	\$29,238.00
	Groundline Replacement Costs	\$40,911.00
	Hook Replacement Costs	\$1,987.00
	Gangion Replacement Costs	\$2,455.00
	SUBTOTAL	\$213,581.00
B	Total Skates Set/Retrieved	28,483.61
	Physical Skates Used	2,155.46
	Total Skate Setting/Retrieving Cost	\$580,639.00
	Fuel Cost Setting/Retrieving Skates	\$275,429.00
	Bait Cost	\$199,346.00
	Groundline Replacement Costs	\$75,956.00
	Hook Replacement Costs	\$13,292.00
	Gangion Replacement Costs	\$16,615.00
	SUBTOTAL	\$1,161,277.00
C	Total Skates Set/Retrieved	78,602.12
	Physical Skates Used	12,409.51
	Total Skate Setting/Retrieving Cost	\$1,238,056.00
	Fuel Cost Setting/Retrieving Skates	\$455,473.00
	Bait Cost	\$530,564.00
	Groundline Replacement Costs	\$171,942.00
	Hook Replacement Costs	\$35,371.00
	Gangion Replacement Costs	\$44,705.00
	SUBTOTAL	\$2,476,111.00
D	Total Skates Set/Retrieved	20,983.74
	Physical Skates Used	6,485.74
	Total Skate Setting/Retrieving Cost	\$283,015.00
	Fuel Cost Setting/Retrieving Skates	\$91,323.00
	Bait Cost	\$141,640.00
	Groundline Replacement Costs	\$24,687.00
	Hook Replacement Costs	\$13,701.00
	Gangion Replacement Costs	\$11,664.00
	SUBTOTAL	\$566,030.00
Total	Total Skates Set/Retrieved	132,160.57
	Physical Skates Used	21,970.76
	Total Skate Setting/Retrieving Cost	\$2,208,501.00
	Fuel Cost Setting/Retrieving Skates	\$854,426.00
	Bait Cost	\$900,788.00
	Groundline Replacement Costs	\$313,496.00
	Hook Replacement Costs	\$64,352.00
	Gangion Replacement Costs	\$75,440.00
TOTAL COSTS		\$4,417,003.00

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Table 3.27: Estimates of processing costs and prices

Port	Price	Gross Margin	Total Processing Costs	Labor Costs	Overhead Costs (Processing)	Packaging Material Costs	Air Shipping Costs	Profit & Administrative Overhead
Estimated Average Ex-Vessel	\$ 2.03							
Estimated Average Wholesale	\$ 2.92							
Estimated Gross Margin	\$ 0.89							
Fresh Halibut								
Bering Sea	\$ 1.77	\$ 1.15	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.47	\$ 0.38
Dutch Harbor	\$ 1.88	\$ 1.04	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.56	\$ 0.18
Peninsula/Aleutians	\$ 1.86	\$ 1.06	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.56	\$ 0.20
Chignik	\$ 1.93	\$ 0.99	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.56	\$ 0.13
Kodiak	\$ 1.95	\$ 0.97	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.47	\$ 0.20
Cook Inlet	\$ 2.03	\$ 0.89	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.40	\$ 0.19
Prince William Sound	\$ 1.97	\$ 0.95	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.40	\$ 0.25
Juneau/Yakutat	\$ 2.01	\$ 0.91	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.27	\$ 0.34
Sitka	\$ 2.03	\$ 0.89	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.27	\$ 0.32
Petersburg/Wrangell	\$ 2.03	\$ 0.89	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.27	\$ 0.32
Ketchikan	\$ 2.03	\$ 0.89	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.27	\$ 0.32
Outside	\$ 2.53	\$ 0.39	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.00	\$ 0.09
Frozen Halibut								
Bering Sea	\$ 1.77	\$ 1.15	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.12	\$ 0.53
Dutch Harbor	\$ 1.88	\$ 1.04	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.12	\$ 0.42
Peninsula/Aleutians	\$ 1.86	\$ 1.06	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.12	\$ 0.44
Chignik	\$ 1.93	\$ 0.99	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.12	\$ 0.37
Kodiak	\$ 1.95	\$ 0.97	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.10	\$ 0.37
Cook Inlet	\$ 2.03	\$ 0.89	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.09	\$ 0.30
Prince William Sound	\$ 1.97	\$ 0.95	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.10	\$ 0.35
Juneau/Yakutat	\$ 2.01	\$ 0.91	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.09	\$ 0.32
Sitka	\$ 2.03	\$ 0.89	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.05	\$ 0.35
Petersburg/Wrangell	\$ 2.03	\$ 0.89	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.05	\$ 0.35
Ketchikan	\$ 2.03	\$ 0.89	\$ 0.50	\$ 0.31	\$ 0.15	\$ 0.04	\$ 0.05	\$ 0.35
Outside	\$ 2.53	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00	\$ 0.00
Total Halibut								
Bering Sea	\$ 1.77	\$ 1.15	\$ 0.32	\$ 0.11	\$ 0.11	\$ 0.10	\$ 0.44	\$ 0.40
Dutch Harbor	\$ 1.88	\$ 1.04	\$ 0.32	\$ 0.11	\$ 0.11	\$ 0.10	\$ 0.52	\$ 0.21
Peninsula/Aleutians	\$ 1.86	\$ 1.06	\$ 0.32	\$ 0.11	\$ 0.11	\$ 0.10	\$ 0.52	\$ 0.23
Chignik	\$ 1.93	\$ 0.99	\$ 0.32	\$ 0.11	\$ 0.11	\$ 0.10	\$ 0.52	\$ 0.15
Kodiak	\$ 1.95	\$ 0.97	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.35	\$ 0.26
Cook Inlet	\$ 2.03	\$ 0.89	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.30	\$ 0.23
Prince William Sound	\$ 1.97	\$ 0.95	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.30	\$ 0.29
Juneau/Yakutat	\$ 2.01	\$ 0.91	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.21	\$ 0.33
Sitka	\$ 2.03	\$ 0.89	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.20	\$ 0.33
Petersburg/Wrangell	\$ 2.03	\$ 0.89	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.20	\$ 0.33
Ketchikan	\$ 2.03	\$ 0.89	\$ 0.37	\$ 0.16	\$ 0.12	\$ 0.09	\$ 0.20	\$ 0.33
Outside	\$ 2.53	\$ 0.39	\$ 0.30	\$ 0.09	\$ 0.10	\$ 0.11	\$ 0.00	\$ 0.09
Note: All plants west of Kodiak were assumed to produce 10% fresh product and 90% frozen, plants "outside" Alaska were assumed to produce all fresh product, and all other plants were assumed to produce 67% fresh and 33% frozen								

3.4 Baseline Information for Community Set-Aside Analysis

This section provides baseline information relevant to the community set-aside issue (Alternative 2, Issue 11). For analysis purposes only, the Council has identified 37 Gulf of Alaska communities (23 in Area 2C and 14 in Area 3A) as potential eligible communities for the set-aside (Table 3.28). While the number and choice of communities are not part of the Council's final action decision in April 2001, the number of eligible communities determines the basis for the magnitude of the 0.5-2.5% range. While there may be slight variations in the final eligibility criteria and exact number of qualifying communities, it is not expected that the number of communities will change radically from this proposed list. Baseline data and background information for the 37 communities are provided in this section. Wherever possible, statistics are shown in percentage terms (e.g., percentage of Area 2C halibut QS held by residents of the 23 target communities in Area 2C, etc.) to provide a context for evaluating their relative importance.

Section 3.4 is organized into four subsection. Subsection 3.4.1 provides statistics on historical and current levels of participation in various fisheries, including federally-managed groundfish fisheries, state-managed limited entry fisheries, guided recreational fisheries and subsistence fishing activities. Subsection 3.4.2 describes the attributes of communities (among the 37 target communities), identifying more developed charter businesses versus communities lacking any appreciable charter operations. Subsection 3.4.3 identifies community and individual requirements for starting and developing economically viable charter businesses. And, subsection 3.4.4 provides baseline information on the economic status of the 37 Gulf communities including demographic information, level of employment, level of poverty, and State and Federal economic assistance programs available to such communities.

3.4.1 Community Participation in Fisheries

One motivation for considering a program to set aside halibut quota for certain smaller Gulf communities is to enable such communities to develop or continue participation in the fishery in light of potential changes in management policies or regulations. It is often the case that such communities are highly dependent on the commercial fishing industry and have few alternative opportunities for economic development. With respect to the halibut charter industry, however, many of the communities under consideration remain relatively 'underdeveloped' in the sense that they have few existing charter operations or may be in the early stages of developing charter businesses. In this context, the set-aside may be viewed more as a mechanism for preserving a future opportunity rather than a program for sustaining current participation levels. Development of charter businesses may help to diversify the economic base for these communities and thereby promote economic stability in the region. This section considers the current level of participation of the 37 Gulf communities in the commercial fishing industry, the charter industry and their dependence on subsistence fishing activities. For the commercial fisheries, changes in participation over time are also considered.

3.4.1.1 Commercial Fisheries

This section provides statistics on the current level of participation of the 37 Gulf communities in the State-managed limited entry fisheries and Federally-managed groundfish and halibut fisheries. Current levels are compared to past levels defined by when permits or QS (for halibut and sablefish) were first issued.

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Table 3.28 List of Proposed Qualified Communities for Community Set-Aside of Halibut Charter IFQ
(for analysis purposes only)

Qualifying Criteria: Area 2C and 3A fishery-dependent coastal communities with populations less than 2,500 (based on the 2000 census) and not connected to the road system.

Area 2C		Area 3A	
<u>Community</u>	<u>Population¹</u>	<u>Community</u>	<u>Population</u>
Angoon	601	Akhiok	80
Coffman Cove	254	Chenega Bay	96
Craig	1,946	Halibut Cove	78
Edna Bay	79	Karluk	58
Elfin Cove	48	Larsen Bay	130
Gustavus	328	Nanwalek	162
Hollis	106	Old Harbor	310
Hoonah	903	Ouzinkie	259
Hydaburg	406	Port Graham	170
Hyder	138	Port Lions	233
Kake	696	Seldovia	289
Kassan	41	Tatitlek	124
Klawock	759	Tyonek	154
Metlakatla	1,540	Yakutat	<u>801</u>
Meyers Chuck	35	14 communities	2,629
Pelican	209		
Point Baker	62		
Port Alexander	98		
Port Protection	64		
Tenakee Springs	107		
Thorne Bay	650		
Whale Pass	92		
Wrangell	<u>2,479</u>		
23 communities	10,510		

¹1990 data—Alaska Department of Community and Economic Development

Note: The population estimates will be updated with the 2000 census information when available.

State Limited Entry Fisheries

Table 3.29 shows the number of State Limited Entry Permits held by residents of the 37 Gulf communities at the time of initial issuance (during the years 1975- 98) and at year-end 1998 (the last year for which community-level data was published by the CFEC). The same statistics are shown for all Alaska communities categorized as “Alaska Rural Local” or ARL which refers to “*Alaska* resident of a *Rural* community which is *Local* to the fishery for which the permit applies.” Permits for different fisheries are grouped by species in both cases.

The majority of the limited entry permits held by the 37 Gulf communities are for various salmon fisheries, with herring permits ranking second. A similar pattern exists for permits held by ARL residents overall. Since initial issuance, the number of salmon permits held by the 37 communities declined 24.5% (as of year-end 1998), which is somewhat higher than the 21.9% decline in the number of salmon permits held by ARL

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Table 3.29 State Limited Entry Permits Held by 37 Gulf Communities (in Area 2C and 3A)

Limited Entry Fishery	37 Gulf Communities					Alaska Rural Local ¹ (ARL)				
	Issued 1975-'98	Held year-end 1998	Change (#)	Change (%)		Issued 1975-'98	Held year-end 1998	Change (#)	Change (%)	
Salmon	1361	1028	-333	-24.5%		5819	4544	-1275	-21.9%	
Crab	68	68	0	0.0%		106	99	-7	-6.6%	
Herring	174	160	-14	-8.0%		934	856	-78	-8.4%	
Sablefish	4	7	3	75.0%		9	10	1	11.1%	
Other (e.g., Shrimp)	57	54	-3	-5.3%		72	69	-3	-4.2%	
Total	1664	1317	-347	-20.9%		6940	5578	-1362	-19.6%	
% of ARL permits	24.0%	23.6%								
% of Alaskan permits	13.5%	12.1%				56.5%	51.2%			
% of All permits	11.1%	9.4%				46.3%	39.6%			

¹ARL refers to Alaska resident of a Rural community which is Local to the fishery for which the permit applies.

Source: based on ARL definition and data provided in "Changes in Distribution of Alaska's Commercial Fisheries Entry Permits 1975-1998," CFEC Report Number 99-3N, July 1999 and CFEC Report 99 for each community.

residents. Across all State limited entry fisheries, there has been a 20.9% decline in the number of permits held by the 37 communities since initial issuance, as of year-end 1998. This is only slightly more than the 19.6% decline in permits held by ARL residents. As a result, the permits held by the 37 communities as a percentage of permits held by ARL residents has remained stable at about 24%.

On the other hand, the decline in permits held by the 37 Gulf communities has reduced their share of permits held by Alaskans from 13.5% to 12.1%. Likewise, as of year-end 1998, 51.2% of permits held by Alaskans were held by ARL residents, down from 56.5% at initial issuance. The net loss of State limited entry permits held by the 37 communities (and held by all ARL residents) is primarily due to net permit transfers to residents outside of these communities and/or the net migration of permit holding residents out of these rural communities.

Commercial Halibut QS Holdings

Table 3.30 shows commercial halibut QS holdings and number of QS holders for the 37 Gulf communities at the time of initial issuance and at year-end 1998 (the last year for which community-level data was published by the CFEC). Holdings are shown for QS corresponding to Areas 2C, 3A, 3B and 4A. The average numbers of QS units held per QS holder for the 37 communities are shown, along with the overall averages for each management area, as indications of the degree of consolidation that has occurred since initial issuance. Some consolidation was expected to occur as a result of the small numbers of QS allocated to some QS recipients.

Since the communities are located in Areas 2C and 3A, most of the QS held by individuals in these communities correspond to these management areas. Individuals residing in the 37 communities held 11,380,431 QS units for Area 2C and 7,641,998 QS units for Area 3A as of year-end 1998, down from 12,976,992 QS units for Area 2C and 8,783,365 QS units for Area 3A at initial issuance. This represents declines in holdings of 12.3% and 13% for QS units for Areas 2C and 3A, respectively.

Among residents of the 37 communities, the number of unique holders of QS has also declined. The number of unique QS holders has declined by 32.4% for Area 2C and by 31.4% for Area 3A. Since the number of QS holders declined more than the number of QS held, the average holdings per participant has increased. Thus, for the 37 communities, the average number of QS units corresponding to Area 2C increased by about 30%, from 24,578 (at initial issuance) to 31,878 (at year-end 1998). Similarly, the average number of Area

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Table 3.30 Halibut QS for IPHC Management Areas 2C, 3A, 3B and 4A and Holders of QS for 37 Gulf Communities (located in Areas 2C and 3A)

	Amount of QS ¹	% of Total	Unique QS Holders	% of Total	Average QS Held 37 Gulf Communities Area Average	
Area 2C						
Initial Issuance	12,976,992	21.8	528	22.1	24,578	24,952
Year-end '98	11,380,431	19.1	357	21.2	31,878	35,342
Change	-1,596,561		-171		7,300	10,390
% Change	-12.3		-32.4		29.7	41.6
Area 3A						
Initial Issuance	8,783,365	4.7	246	8.0	35,705	60,365
Year-end '98	7,641,998	4.1	168	7.5	45,488	82,209
Change	-1,141,367		-78		9,783	21,844
% Change	-13.0		-31.7		27.4	36.2
Area 3B						
Initial Issuance	1,201,924	2.2	37	3.5	32,484	51,348
Year-end '98	817,367	1.5	17	2.5	48,080	80,479
Change	-384,557		-20		15,596	29,131
% Change	-32.0		-54.1		48.0	56.7
Area 4A						
Initial Issuance	369,199	2.5	10	1.9	36,920	27,507
Year-end '98	77,713	0.5	4	1.1	19,428	40,398
Change	-291,486		-6		-17,492	12,891
% Change	-79.0		-60.0		-47.4	46.9

¹Excludes small amounts held and few holders of QS for Areas 4B - 4E.

Source: Statistics compiled from data presented in "Changes Under Alaska's Halibut IFQ Program, 1995 To 1998," CFEC, November, 1999 and CFEC Report 99 for each community.

3A QS units increased by 27.4%, from 35,705 (at initial issuance) to 45,488 (at year-end 1998). The degree of consolidation for the 37 communities is somewhat less than what occurred overall for each area. Overall, the average number of QS held per participant increased by 41.6% for Area 2C QS and by 36.2% for Area 3A QS.

The losses of QS for Areas 3B and 4A from residents in the 37 communities were larger in magnitude which is not too surprising given that the 37 communities are located in Areas 2C and 3A. The number of QS held by residents in the 37 communities declined 32% and 79% for QS corresponding to Areas 3B and 4A, respectively. Holdings of QS for Areas 4B-4D were minor and QS corresponding to Area 4E are allocated entirely to Community Development Quota (CDQ) groups. The number of unique holders of QS for Areas 3B and 4A has also declined for the 37 communities.

The number holding Area 3B QS declined 54% and the number holding Area 4A QS declined 60% between initial issuance and year-end 1998. The average increased by 48% but decreased by 47.4% for QS corresponding to Areas 3B and 4A, respectively. The sharp drop in holdings of Area 4A QS is not surprising given the remoteness of Area 4A from the 37 communities (located in Areas 2C and 3A). Also, QS holders in Areas 2C and 3A may have received Area 4A quota as a result of the CDQ compensation formula and may not have fished in Area 4A in the past.

Overall, individuals in the 37 communities have experienced a net loss in commercial halibut QS units between initial issuance and year-end 1998. These net losses are a result of a combination of net transfers of QS units and migration of QS holders out of the 37 communities. As a result, the share of QS units held by individuals in the 37 communities has declined. As of year-end 1998, holdings of QS units for Area 2C represented 19.1% of the total QS units for the area, down from 21.8% at the time of initial issuance. Similarly, individuals in the 37 communities held 4.1% of the QS units for Area 3A, down from 4.7% at initial issuance. The share of QS units for Areas 3B and 4A held by individuals in the 37 communities also declined. As of year-end 1998, individuals in the 37 communities held 1.5% of the Area 3B QS units and held 0.5% of the Area 4A QS units.

Commercial Sablefish QS Holdings

Table 3.31 shows commercial sablefish QS holdings and number of QS holders for the 37 Gulf communities at the time of initial issuance and at year-end 1998. Holdings are shown for QS corresponding to the following sablefish management areas: Southeast, West Yakutat, Central Gulf, Western Gulf and the Bering Sea. The average numbers of QS units held per participant for QS holders in the 37 communities are shown, along with the overall averages for each management area, as indications of the degree of consolidation that has occurred since initial issuance.

Since the communities are geographically located in Areas 2C and 3A, most of the QS units held by residents of these communities correspond to the Southeast, West Yakutat and Central Gulf management areas. Residents in the 37 communities held 5,478,601 QS units for the Southeast, 472,546 QS units for West Yakutat and 3,738,624 QS units for the Central Gulf as of year-end 1998. Since the initial issuance, holdings of QS units for these areas has declined by 25.8% for the Southeast and declined by 42% for West Yakutat but increased by 40% for the Central Gulf.

Among residents of the 37 communities, the number of unique holders of QS declined for these three management areas. The number of unique QS holders declined by 45.8% for Southeast QS, by 38.5% for West Yakutat QS and by 50% for Central Gulf QS. There was a significant degree of consolidation as measured by the average holdings of QS units for QS corresponding to the Southeast and the Central Gulf. As of year-end 1998, QS holders in the 37 communities held an average of 121,747 QS units for the Southeast and an average of 233,664 QS units for the Central Gulf. These average holdings are similar to the area-wide averages of 125,653 and 231,800 QS units for the Southeast and the Central Gulf, respectively. On the other hand, average holdings of West Yakutat QS declined by 6% and it appears that residents of the 37 communities are less active in this management area. For example, the average holdings of QS for West Yakutat was 29,534 QS units for holders in the 37 communities which is much lower than the average holdings of 156,033 QS units for all holders of West Yakutat QS.

Residents of the 37 communities hold fewer QS units for the Western Gulf and Bering Sea but the amounts have remained relatively stable since the initial issuance. For the Western Gulf, participants in the 37 communities held 191,252 QS units as of year-end 1998, down from 209,247 QS units at initial issuance. For the Bering Sea, holders in the 37 communities held 242,164 QS units as of year-end 1998, down from 244,972 QS units at initial issuance. There has been some modest consolidation of QS for these two areas since the initial issuance although the average holdings of QS for participants in the 37 communities is much lower than the area-wide averages. QS holders in the 37 communities held an average of 38,250 QS units for the Western Gulf (compared to the area-wide average of 192,251) and an average of 48,433 QS units for the Bering Sea (compared to the area-wide average of 145,215) as of year-end 1998.

Table 3.31 Sablefish QS and Holders of QS for 37 Gulf Communities (located in Areas 2C and 3A)

	Amount of QS ¹	% of Total	Unique QS Holders	% of Total	<i>Average QS Held</i> 37 Gulf Communities Area Average	
Southeast						
Initial Issuance	7,384,837	11.1	83	11.7	88,974	93,495
Year-end '98	5,478,601	8.3	45	8.6	121,747	125,653
Change	-1,906,236		-38		32,773	32,158
% Change	-25.8		-45.8		36.8	34.4
W. Yakutat						
Initial Issuance	816,751	1.5	26	5.7	31,414	117,694
Year-end '98	472,546	0.9	16	4.7	29,534	156,033
Change	-344,205		-10		-1,879	38,339
% Change	-42.1		-38.5		-6.0	32.6
C. Gulf						
Initial Issuance	2,667,181	2.4	32	5.0	83,349	173,912
Year-end '98	3,738,624	3.4	16	3.3	233,664	231,800
Change	1,071,443		-16		150,315	57,888
% Change	40.2		-50.0		180.3	33.3
W. Gulf						
Initial Issuance	209,247	0.6	6	2.6	34,875	156,216
Year-end '98	191,252	0.5	5	2.7	38,250	192,251
Change	-17,995		-1		3,376	36,035
% Change	-8.6		-16.7		9.7	23.1
Bering Sea						
Initial Issuance	244,972	1.3	6	4.2	40,829	129,202
Year-end '98	242,164	1.3	5	3.9	48,433	145,215
Change	-2,808		-1		7,604	16,013
% Change	-1.1		-16.7		18.6	12.4

¹Excludes small amounts held and few holders of QS for the Aleutian Islands.

Source: Statistics compiled from data presented in "Changes Under Alaska's Sablefish IFQ Program, 1995 To 1998," CFEC, November, 1999 and CFEC Report 99 for each community.

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The 37 communities have experienced a net loss in commercial sablefish QS holdings among residents for all management areas except the Central Gulf between initial issuance and year-end 1998. Any net losses are likely a result of a combination of net transfers of QS units and migration of QS holders out of the 37 communities. On the other hand, holdings of sablefish QS units for the Central Gulf increased, along with the percentage held by the 37 communities. As of year-end 1998, holders in the 37 communities held 3.4% of the QS units for the Central Gulf, an increase from 2.4% at initial issuance. Holdings of sablefish QS for the Central Gulf are concentrated among residents in Seldovia who hold 3,339,260 QS units and residents of Pelican who hold 282,256 QS units. Together QS holders in these two communities hold about 97% of the aggregate sablefish QS units held by residents of all 37 communities.

Gross Earnings from Commercial Fishing

Table 3.32 provides aggregate gross earnings for the 37 communities in 1998 for the halibut, salmon and other commercial fisheries. Gross earnings are attributed to each community based on the permanent residence of the permit holder. For each area (2C or 3A), percent breakdowns are provided to show relative reliance on the halibut, salmon and other fisheries, as well as relative market share of communities.

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Table 3.32 Gross Earnings (1998 dollars) from Commercial Fisheries for 37 Target Communities¹

Community	Area	Gross Earnings (1998 \$)				% of Area
		Halibut	Salmon	Other	Total	
Angoon/Elfin Cove	2C	209,260	454,446	99,935	763,641	4.1%
Coffman Cove	2C	0	**	**	**	**
Craig	2C	320,359	1,716,973	1,099,110	3,136,442	16.9%
Edna Bay	2C	62,600	143,393	132,142	338,135	1.8%
Gustavus	2C	85,190	69,487	272,862	427,539	2.3%
Hollis	2C	0	0	0	0	
Hoonah	2C	443,799	775,012	933,662	2,152,473	11.6%
Hydaburg	2C	54,906	13,677	193,979	262,562	1.4%
Hyder	2C	**	**	**	**	**
Kake	2C	289,376	362,374	212,413	864,163	4.7%
Kasaan	2C	0	**	**	**	**
Klawock	2C	51,953	438,287	159,282	649,522	3.5%
Metlakatla	2C	32,685	528,716	111,686	673,087	3.6%
Meyers Chuck	2C	**	77,793	**	133,288	0.7%
Pelican	2C	494,046	350,553	1,003,449	1,848,048	10.0%
Point Baker	2C	49,488	349,144	0	398,632	2.1%
Port Alexander	2C	172,244	603,083	193,431	968,758	5.2%
Port Protection	2C	**	**	0	**	**
Tenakee Springs	2C	0	0	0	0	
Thorne Bay	2C	43,681	121,586	36,075	201,342	1.1%
Whale Pass	2C	**	0	0	**	**
Wrangell	2C	1,189,271	2,434,717	2,014,174	5,638,162	30.4%
Subtotal	2C	3,536,820	8,497,410	6,511,086	18,545,316	
% Breakdown		19.1%	45.8%	35.1%	100%	
Akhiok	3A	0	**	0	**	**
Chenega Bay	3A	0	**	0	**	**
Halibut Cove	3A	**	59,365	**	113,203	1.3%
Karluk	3A	0	0	0	0	
Kodiak Area*	3A	66,905	2,400,233	1,054,437	3,521,575	39.6%
Larsen Bay	3A	0	720,792	25,631	746,423	8.4%
Nanwalek	3A	0	**	0	**	**
Port Graham	3A	**	111,323	**	134,184	1.5%
Seldovia	3A	564,955	637,186	1,283,692	2,485,833	27.9%
Tatitlek	3A	0	**	0	**	**
Tyonek	3A	0	**	0	**	**
Yakutat	3A	163,665	1,242,688	91,885	1,498,238	16.8%
Subtotal	3A	872,224	5,572,234	2,455,645	8,900,103	
% Breakdown		9.8%	62.6%	27.6%	100%	

¹Based on permanent residence of permit holder.

*Combines gross earnings for Old Harbor, Ouzinkie and Port Lions for confidentiality reasons.

**masked for confidentiality reasons; area subtotals, however, include data masked for confidentiality.

In Area 2C, 20 of the 23 target communities reported gross earnings from commercial fisheries in 1998 while three communities (Hollis, Port Protection and Tenakee Springs) reported no earnings. Total gross earnings for Area 2C target communities were \$18,545,316 in 1998, 45.8% from salmon, 19.1% from halibut and the balance (35.1%) from other commercial fisheries. Of the 20 communities in the area, Wrangell's gross earnings represented 30.4% of the total, followed by Craig (16.9%), Hoonah (11.6%), and Pelican (10%).

In Area 3A, all target communities except Karluk reported gross earnings from commercial fisheries in 1998. Total gross earnings were \$8,900,103 in 1998, slightly less than half the gross earnings for Area 2C. Compared to Area 2C, target communities in Area 3A have a higher reliance on the salmon fisheries, representing 62.6% of total gross earnings. Reliance on halibut is lower for target communities in 3A, representing 9.8% of 1998 gross earnings. Communities with the largest market share include three communities in the Kodiak area (Old Harbor, Ouzinkie and Port Lions) that had earned 39.6% of the Area 3A subtotal, followed by Seldovia (27.9%) and Yakutat (16.8%).

It should be noted, however, that gross earnings and the percentage from halibut for 1998 may be lower compared to previous years (1994-'97) since average ex-vessel halibut prices for 1998 of \$1.27 per pound were at their lowest levels since 1994. The average annual ex-vessel price for halibut for the 1994-'97 period was \$2.07. Thus, for example, in 1997, 49 halibut permits were fished by persons residing in Craig, yielding 16.7% of that community's estimated gross earnings. In 1998 a smaller number of halibut permits were fished (38) and the associated estimated percentage of gross earnings was only 10.4% (based on CFEC 'commercial fishing catch data aggregated by Alaska Census Division and City').

3.4.1.2 Charter Industry

Two methods are used to indicate the recent level of participation by the 37 communities in the halibut charter industry. First, the numbers of business licenses held by residents of the 37 communities for the category of "Fishing Guides" are tabulated in Table 3.33, along with business licenses for activities potentially related to the charter industry (data from the Alaska Department of Community and Economic Development [DCED]). This data does not indicate, however, the extent that clients of these charter operators direct their efforts toward catching halibut. The second table, Table 3.34, shows the amounts of halibut (in numbers of fish) caught by clients of charter vessels which *landed* in one of the 37 communities based on ADFG logbook data for 1998 and 1999.

Business Licenses for "Fishing Guides" Held by 37 Communities

Table 3.33 shows the number of business licenses held by residents of the 37 communities in Areas 2C and 3A for the "Fishing Guides" and several other industry categories. Since clients of the charter industry are most often tourists or consumers of other recreational activities, the number of licenses for businesses likely related to tourism are also provided.

Residents of the 37 communities held a total of 159 business licenses (active until year-end 2000 or 2001) in the "Fishing Guides" category, with 118 held by residents in the Area 2C communities and the remaining 41 held by Area 3A community residents. The licenses are concentrated among a few communities in each area while several communities have none. In Area 2C, Craig has the most with 26 licenses for "Fishing Guides", followed by Wrangell with 15, Gustavus with 13 and Pelican with 10. In Area 3A, Yakutat residents hold 19 licenses for "Fishing Guides" with the remaining Area 3A communities each holding five or fewer. Since the CSA program may be subject to a community cap, some of the communities with relatively large numbers of existing charter businesses may not be eligible to receive set-aside quota. Seven communities in Area 2C and four in Area 3A currently hold no business licenses for "Fishing Guides." The lack of existing charter businesses in these communities may indicate that barriers exist that have thus far precluded development of viable charter businesses. Since these communities are not currently limited by the proposed halibut charter IFQ program, the lack of existing charter businesses may indicate barriers that would also preclude future development of any charter operations even with the CSA program.

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The other types of business licenses held by the 37 communities will be discussed in more detail in Section 3.4.2 which describes the attributes of communities with existing charter businesses. In general, however, communities with existing charter operations also support businesses in two main categories: (1) Other Recreation & Sight Seeing, and (2) Food & Lodging.

Table 3.33 State of Alaska Business Licenses for 37 Communities in Charter and Related Industries

Community	Area	Fishing Guides	Other Fishing & Processing (note 1)	Sporting Goods (Retail)	Other Recreation & Sight Seeing (note 2)	Air & Water Transportation Services & Support (note 3)	Food & Lodging (note 4)	Community Subtotal
Craig	2C	26		2	15	2	20	65
Wrangell	2C	15	7	2	17	2	16	59
Gustavus	2C	13		1	13	4	17	48
Pelican	2C	10			3		6	19
Hoonah	2C	8	3	3	3		13	30
Elfin Cove	2C	7			2		3	12
Hydaburg	2C	6						6
Thorne Bay	2C	5		3	2		12	22
Klawock	2C	5	2	1	2	1	9	20
Port Alexander	2C	4		1	1	1	7	14
Angoon	2C	4	1	1	2		2	10
Metlakatla	2C	4			1		3	8
Kake	2C	3			1	1	4	9
Point Baker	2C	3			1		4	8
Tenakee Springs	2C	3	1		1	1	1	7
Coffman Cove	2C	2		1	1		5	9
Hyder	2C						3	3
Meyers Chuck	2C					1	2	3
Edna Bay	2C				1		1	2
Whale Pass	2C						2	2
Kasaan	2C				1			1
Hollis	2C							0
Port Protection	2C							0
Yakutat	3A	19	1	1	6	1	15	43
Port Lions	3A	5	1	1	5	2	6	20
Ouzinkie	3A	5						5
Old Harbor	3A	3	1		7	1	3	15
Karluk	3A	3					3	6
Larsen Bay	3A	2			1		7	10
Seldovia	3A	1	3	1	16	2	38	61
Halibut Cove	3A	1			1		4	6
Akhiok	3A	1						1
Tatitlek	3A	1						1
Chenega Bay	3A				2	1	3	6
Tyonek	3A			1		1	3	5
Port Graham	3A			1		1	2	4
Nanwalek	3A						2	2
Subtotal	2C	118	14	15	67	13	130	357
Subtotal	3A	41	6	5	38	9	86	185
Total		159	20	20	105	22	216	542

Halibut Harvested by Clients of Charter Businesses

Table 3.34, shows the amount of halibut (in numbers of fish) harvested by clients of charter boats that landed in the 37 communities based on ADFG logbook data for 1998 and 1999. The vessel landing location is based on the port where clients disembarked and does not necessarily reflect the community where the charterboat captain or business owner resides, where the business is licensed or where the fish were caught. The number of unique vessels and the total number of trips for each community are also shown for 1998 and 1999. Since each charter business may own and operate more than one vessel, the number of vessels for each community typically exceeds the number of business licenses. For example, Area 2C, which has 118 businesses licensed as “Fishing Guides” (and 67 additional businesses licensed in the “Other Recreation” category) had 193 unique vessels in 1998 and 211 vessels in 1999. Similarly, Area 3A, which has 40 businesses licensed as “Fishing Guides” (and 20 additional “Other Recreation” licenses) had 52 vessels in 1998 and 57 vessels in 1999.

The total charter halibut harvest for the 37 communities was 20,795 fish in 1998 and 20,584 fish in 1999. The charter harvest for Area 2C was 13,459 fish and 15,136 fish in 1998 and 1999, respectively. The charter harvest for Area 3A was 7,336 fish in 1998 and 5,448 fish in 1999. Relative to the overall Area 2C charter halibut harvest levels, the harvest by the 23 target communities in Area 2C represented 20.8% and 23.2% for 1998 and 1999, respectively. Similarly, the charter halibut harvest for the 14 target communities in Area 3A represented 4.6% and 3.2% of the overall charter harvest for Area 3A in 1998 and 1999, respectively.

The numbers of vessels, trips and fish harvested for each community are reasonably consistent with the business license data shown in Table 3.33. Among the 37 communities, Craig (in Area 2C) and Yakutat (in Area 3A), which had the most licensed charter businesses, had the highest charter halibut harvests in 1998 and 1999. The combined 1998 and 1999 harvest levels were 11,043 fish for Craig and 6,411 fish for Yakutat. Communities with the next highest charter harvest levels include Elfin Cove, Gustavus and Klawock in Area 2C and Larsen Bay and Seldovia in Area 3A. Some communities with higher numbers of boats had relatively modest harvest levels, including Pelican and Thorne Bay. Still other communities, such as Hydaburg, Point Baker and Metlakatla, have several licensed charter businesses but show low halibut harvests levels in 1998 and 1999. These results may be due to effort being focused on other species such as salmon where halibut is only caught incidentally or targeted occasionally.

Additional statistics based on these data are provided in Table 3.35, including community averages for number of boats, harvest levels, harvest per trip, trips per boat and harvest per boat. For communities with existing charter businesses, the median number of boats per community was 6 in 1998 and 8 in 1999. The median harvest level per community was 232 fish in 1998 and 357 fish in 1999. The averages are greater than the medians for both the number of boats and the charter harvest levels per community since a few communities have relatively high numbers of boats and harvest levels.

There are also differences between charter operations in Area 2C versus Area 3A in fish harvested per trip and fish harvested per boat. For Area 2C, the average harvest per trip was 2.1 fish in 1998 and 2.2 fish in 1999. For Area 3A, the average harvest per trip was 5.7 fish in 1998 and 5.3 fish in 1999. In Area 2C, the average harvest per boat was 53.2 fish in 1998 and 50.7 fish in 1999. In Area 3A, the average harvest per boat was 89.1 fish in 1998 and 92.8 fish in 1999. Thus, while there are fewer charter boats in Area 3A than in 2C, the typical boat in Area 3A has a higher halibut harvest than the typical boat in Area 2C. This may be due to charter effort being more focused on halibut or greater local availability of halibut in 3A compared to 2C. These results are also consistent with other known differences between the charter fisheries in Areas 2C and 3A. That is, charter trips in Area 2C (as compared to trips in Area 3A) tend to be half-day trips, take fewer clients and focus more effort on salmon than halibut.

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Table 3.34 Halibut Harvested (in numbers of fish) by Clients of Charterboats Landed in 37 Gulf Communities

Community		Unique Boats		Trips		Harvest (Number of Fish)		
		98	99	98	99	98	99	Both
Craig	2C	39	59	1,296	1,622	4,859	6,184	11,043
Elfin Cove	2C	29	27	936	1,043	2,249	1,836	4,085
Gustavus	2C	33	22	807	787	1,992	1,927	3,919
Klawock	2C	8	13	306	379	1,538	1,562	3,100
Angoon	2C	6	7	223	287	664	1,106	1,770
Hoonah	2C	15	19	189	223	637	870	1,507
Wrangell	2C	21	20	346	347	664	536	1,200
Coffman Cove	2C	3	6	96	103	299	357	656
Port Alexander	2C	1	5	46	155	97	344	441
Thorne Bay	2C	8	11	236	151	165	170	335
Pelican	2C	13	5	115	51	153	47	200
Whale Pass	2C	4	9	30	99	92	97	189
Port Protection	2C	6	3	37	82	41	87	128
Kake	2C	2	2	4	12	4	8	12
Hydaburg	2C		2		5		5	5
Hyder	2C	1		12		3		3
Point Baker	2C	2		4		2		2
Metlakatla	2C	2		2		-		-
Hollis	2C		1		2		-	-
Edna Bay	2C							-
Kasaan	2C							-
Meyers Chuck	2C							-
Tenakee Springs	2C							-
Yakutat	3A	17	13	727	543	3,713	2,698	6,411
Larsen Bay	3A	18	20	300	163	1,797	985	2,782
Seldovia	3A	6	9	171	157	1,451	1,307	2,758
Port Lions	3A	8	9	140	99	356	259	615
Old Harbor	3A	1	6	19	46	7	199	206
Chenega	3A	1		1		12		12
Halibut Cove	3A	1		2		-		-
Akhiok	3A							-
Karluk	3A							-
Nanwalek	3A							-
Ouzinkie	3A							-
Port Graham	3A							-
Tatitlek	3A							-
Tyonek	3A							-
Subtotal	2C	193	211	4,685	5,348	13,459	15,136	28,595
Subtotal	3A	52	57	1,360	1,008	7,336	5,448	12,784
Total		245	268	6,045	6,356	20,795	20,584	41,379

Source: ADF&G logbook data for 1998 and 1999.

3.4.1.3 Subsistence Fishing

Table 3.36 provides a qualitative indication by the authors of the extent that residents in the 37 communities rely on commercial fishing and subsistence fishing. This information is based on community profiles provided by DCED. While nearly all communities are economically tied to the commercial fishing industry, only about

Table 3.35 Charter Halibut Harvest Statistics for Target Communities in Area 2C and Area 3A.

Community	Unique Boats		Harvest (Number of Fish)		Harvest per Trip		Trips per Boat		Harvest per Boat	
	98	99	98	99	98	99	98	99	98	99
Subtotal 2C	193	211	13,459	15,136						
Median	6	8	165	351						
Average	11	13	792	946	2.1	2.2	20.1	20.1	53.2	50.7
Subtotal 3A	52	57	7,336	5,448						
Median	6	9	356	985						
Average	7	11	1,048	1,090	5.7	5.3	18.2	17.2	89.1	92.8
Total	245	268	20,795	20,584						
Median	6	9	232	357						
Average	10	13	866	980	3.0	3.0	19.5	19.4	63.7	60.7

Source: ADF&G logbook data for 1998 and 1999.

60% rely on subsistence fishing. For some communities, including Kasaan, Akhiok, Larsen Bay, Old Harbor, Port Lions and Yakutat, the majority of residents participate in subsistence fishing (and hunting) activities. The primary species harvested by subsistence fishing include salmon, halibut, shrimp, crab and clams. Subsistence fishing does not appear to be of high importance for a few communities that have other sources of employment, including Hollis (which relies mostly on logging), Pelican (which relies on commercial fishing and processing), Wrangell (which relies on commercial fishing, processing and logging), Port Graham (which recently completed a \$4.5 million cannery), and Seldovia (which relies on commercial fishing and processing).

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Table 3.36 Indications of Reliance on Commercial and Subsistence Fishing for 37 Gulf Communities

Community	Area	Reliance on Commercial Fishing	# Permit Holders	Reliance on Subsistence	Subsistence Fishing Species
Angoon	2C	major source	59	important	salmon, halibut, shellfish
Coffman Cove	2C		6		
Craig	2C	important	198	some	salmon, halibut, shrimp, crab
Edna Bay	2C	important	16		
Elfin Cove	2C	important	30		
Gustavus	2C	some	36		
Hollis	2C	(mostly logging)			
Hoonah	2C	major source	114	important	salmon, halibut, shellfish
Hydaburg	2C	important	38	important	salmon, halibut, shrimp, crab
Hyder	2C		3	recreational	salmon, shrimp and crab
Kake	2C	major source	73	important	salmon, halibut, shellfish
Kasaan	2C	(high unemployment)	2	majority	salmon, halibut, shrimp, crab
Klawock	2C	(mostly logging)	43	some	salmon, shrimp and crab
Metlakatla	2C		49	some	salmon, halibut, clams
Meyers Chuck	2C	important	5	many	
Pelican	2C	fishing, processing	42		
Point Baker	2C	hand trollers	29	important	salmon, halibut, shrimp, crab
Port Alexander	2C	important	33	important	salmon, halibut, shrimp, crab
Port Protection	2C	(seasonal economy)	1	important	salmon, halibut, shrimp, crab
Tenakee Springs	2C	important	18		
Thorne Bay	2C	(mostly logging)	24	supplemental	salmon, halibut, shrimp, crab
Whale Pass	2C		2	supplemental	
Wrangell	2C	fishing, processing, logging	253		
Akhiok	3A		5	majority	salmon, crab, shrimp, clams
Chenega Bay	3A	some	4	some	
Halibut Cove	3A	(self-employed artists)	6		
Karluk	3A	(fish processing)		important	salmon, trout
Larsen Bay	3A	important	15	majority	salmon, halibut, clams, crab
Nanwalek	3A	(fish processing)	6	important	
Old Harbor	3A	major source	33	majority	salmon, halibut, crab
Ouzinkie	3A	important	26	majority	salmon, halibut, shrimp, crab
Port Graham	3A	(new \$4.5 mil cannery)	15		
Port Lions	3A	fishing, processing, tourism	22	majority	salmon, halibut, shrimp, crab, clams
Seldovia	3A	fishing and processing	62		
Tatitlek	3A	(fish processing)	3	important	salmon hatchery
Tyonek	3A		20	important	salmon
Yakutat	3A	fishing and processing	168	majority	salmon, trout, shellfish
% Reliance	2C	96%		57%	
% Reliance	3A	93%		64%	
% Reliance	Both	95%		59%	

Source: Based on community profiles from the Alaska Department of Community and Economic Development.

3.4.2 Attributes of Communities with Existing Charter Businesses

One approach for determining what factors may have contributed to greater development of charter operations in some communities versus others is to consider other related businesses available in the communities, the geographic location of the communities and the types of transportation and infrastructure. As discussed in Section 3.4.1.2, several communities among the 37 target communities have a number of existing charter businesses (Table 3.33). In Area 2C, communities with more than five licensed charter businesses include Craig (26 charter businesses), Wrangell (15), Gustavus (13), Pelican (10), Hoonah (8), Elfin Cove (7) and Hydaburg (6). In Area 3A, Yakutat with 19 charter businesses is the only community with more than five charter businesses.

3.4.2.1 Availability of Related Services and Businesses

As previously discussed (Table 3.33), the communities with more existing charter businesses also support businesses in two major categories: (1) Other Recreation & Sight Seeing; and (2) Food & Lodging. The first category also includes a number of additional charter boat businesses that were not included in the “Fishing Guides” category. It is possible that these other charter boat businesses do not *exclusively* provide guided fishing opportunities and, hence, are not licensed under the “Fishing Guides” category. The second group includes various types of food and lodging services including businesses licensed as ‘Full Service Restaurants,’ ‘Accommodation & Food Services,’ ‘Hotels & Lodging,’ ‘Traveler Accommodations,’ and ‘RV Parks & Recreational Camps.’

While it may not be possible to conclude from this data that these other services are prerequisites for sustaining charter businesses, it is clear that communities with more developed charter businesses also have a number of other services to support tourism. In Area 2C, the three communities with the most charter businesses (Craig, Wrangell and Gustavus) also have a relatively large number of other recreational, food and lodging services. Similarly, in Area 3A, Yakutat has 19 charter businesses (for guided fishing), 6 other recreational businesses and 15 food and lodging businesses. Two exceptions to this pattern are Hydaburg in Area 2C and Ouzinkie in Area 3A. Hydaburg has six (6) licensed guided fishing charter businesses but no other related licensed services. Similarly, Ouzinkie has five (5) licensed charter businesses but no other related licensed businesses.

3.4.2.2 Geographic Location of 37 Communities

Table 3.37 describes the geographical location of the 37 communities under consideration. The locations of these communities are also shown in Figure 3.12, along with the locations of the larger Gulf communities which have more established charter businesses. The accessibility of the 37 communities from the larger communities (e.g., Homer, Juneau, Ketchikan, etc.) may be relevant to whether these communities can support further development of charter businesses.

Of the 23 communities in Area 2C, about half are located on or near Prince of Wales Island. Many of these communities have access to the Prince of Wales Island road system and to the State Ferry service at Hollis. Among the Area 2C communities, Hyder is the only community that is accessible by road, likely because of its location on the U.S./Canadian border and its close proximity (2 miles) to Stewart, British Columbia. Among the 14 communities in Area 3A, nearly half are located on or near Kodiak Island and several are located on the Kenai Peninsula.

With respect to the communities that have more developed charter businesses (e.g., Craig, Wrangell, Gustavus and Yakutat), there is no single geographical feature that could explain their relative success. Craig is just off the west coast of Prince of Wales Island, Wrangell is located on Wrangell Island about 90 miles from Ketchikan, Gustavus is located at the mouth of the Salmon River about 48 air miles from Juneau, and Yakutat is isolated among the lowlands along the Gulf of Alaska.

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Table 3.37 Description of Location of 37 Communities (23 in Area 2C and 14 in Area 3A)

Community	Area	Description of Location
Angoon	2C	on Admiralty Island
Coffman Cove	2C	NE coast of Prince of Wales Island
Craig	2C	off west coast of Prince of Wales Island
Edna Bay	2C	on Kosciusko Island, NW of Prince of Wales Is.
Elfin Cove	2C	Chichagof Island, 33 miles west of Hoonah
Gustavus	2C	at mouth of Salmon River, 48 air miles from Juneau
Hollis	2C	east side of Prince of Wales Island
Hoonah	2C	NE shore of Chichagof Island
Hydaburg	2C	southwest coast of Prince of Wales Island
Hyder	2C	at head of Portland Canal, a 70 mile-long fjord
Kake	2C	northwest coast of Kupreanof Island
Kasaan	2C	east side of Prince of Wales Island
Klawock	2C	west coast of Prince of Wales Island
Metlakatla	2C	on Annette Island, 15 miles from Ketchikan
Meyers Chuck	2C	on tip of Cleveland Peninsula, 40 miles from Ketchikan
Pelican	2C	NW coast of Chichagof Island
Point Baker	2C	on northern tip of Prince of Wales Island
Port Alexander	2C	southeastern tip of Baranof Island
Port Protection	2C	on northern tip of Prince of Wales Island
Tenakee Springs	2C	east side of Chichagof Island
Thorne Bay	2C	on eastern side of Prince of Wales Island
Whale Pass	2C	on northeast side of Prince of Wales Island
Wrangell	2C	on Wrangell Island, 89 mi NW of Ketchikan
Akhiok	3A	southern end of Kodiak Island
Cheneg Bay	3A	Evans Island, 42 miles SE of Whittier
Halibut Cove	3A	12 miles SE of Homer, south shore of Kachemak Bay
Karluk	3A	west coast of Kodiak Island
Larsen Bay	3A	NW coast of Kodiak Island
Nanwalek	3A	southern tip of Kenai Peninsula, 10 mi. SW of Seldovia
Old Harbor	3A	on the southeast coast of Kodiak Island
Ouzinkie	3A	west coast of Spruce Island, adjacent to Kodiak Island
Port Graham	3A	southern end of the Kenai Peninsula
Port Lions	3A	on north coast of Kodiak Island
Seldovia	3A	on Kenai Peninsula, across from Homer
Tatitlek	3A	northeast shore of Tatitlek Narrows, on Alaska Mainland
Tyonek	3A	on bluff on NW shore of Cook Inlet, 43 mi. SW of Anchorage
Yakutat	3A	along Gulf of Alaska, 212 miles NW of Juneau

Source: Based on community profiles from the Alaska DCED

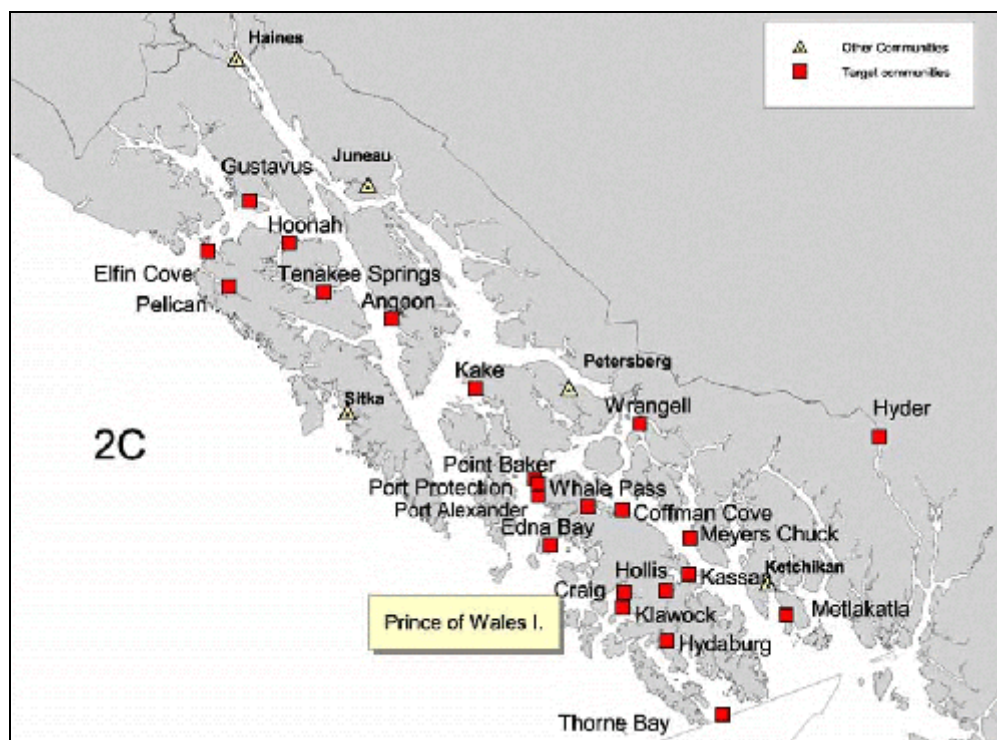
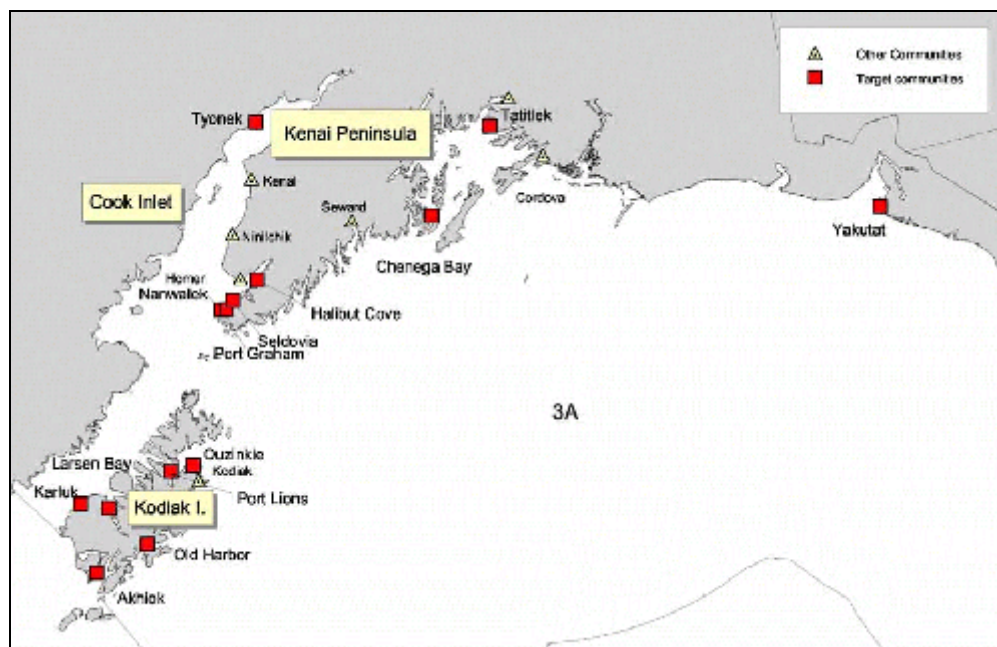


Figure 3.12 Location of 14 Target Communities in Area 3A (top) and 23 Target Communities in Area 2C (bottom).

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3.4.2.3 Transportation Services and Infrastructure

Table 3.38 shows the availability of transportation services and support facilities for the 37 communities (based on community profiles from the DCED). The communities with more developed charter businesses (i.e., more than five licensed “Fishing Guides” businesses) are shaded. Nearly all of the 37 communities are accessible by air or water only. As mentioned above, the exception is Hyder. Most of the communities on Prince of Wales Island are on the island’s road system, providing access to the State Ferry terminal at Hollis and the airport at Klawock. The information in the table also indicates whether communities have tourism, scheduled flights, airstrip or seaplane base, state ferry access, boat launch, docking facilities, small boat harbor or deep draft dock.

Table 3.38 Transportation Availability and Facilities for 37 Communities

Community	Area	Sch'd Tourism	Flights	Airport or Airstrip	Seaplane Base	State Ferry	Boat Launch or Dock	Small Boat Harbor	Deep Draft Dock
Angoon	2C		Y		Y	Y		Y	Y
Coffman Cove	2C		Y			at Hollis	Y		
Craig	2C		Y		Y	at Hollis	Y	Y	
Edna Bay	2C				Y		Y	Y	
Elfin Cove	2C					at Pelican			
Gustavus	2C	Y	Y	Y	Y			Bartlett Cove	
Hollis	2C			Klawock	Y	Y			
Hoonah	2C		Y	Y	Y	Y	Y	Y	
Hydaburg	2C		Y		Y	at Hollis	Y	Y	
Hyder	2C	Y		Y	Y	Y	Y	Y	Y
Kake	2C		Y			Y	Y	Y	Y
Kasaan	2C		Y	Y			Y	Y	funds req'std
Klawock	2C		Y	Y	Y	at Hollis	Y	Y	Y
Metlakatla	2C		Y	Y	Y	Spring-Fall	Y	Y	
Meyers Chuck	2C				Y		Y	natural harbor	
Pelican	2C		daily		Y	Y	Y	Y	
Point Baker	2C		Y		Y		Y	Y	
Port Alexander	2C				Y		Y	Y	
Port Protection	2C				Y		Y	Y	
Tenakee Springs	2C	Y	Y		Y	Y		Y	
Thorne Bay	2C			At Klawock	Y	at Hollis	Y	Y	
Whale Pass	2C				Y	at Hollis	Y		
Wrangell	2C	Y	Y	Y	Y	Y	Y	Y	Y
Akhiok	3A		Y	Y			Y		
Chenega Bay	3A			Y			Y	Y	
Halibut Cove	3A				Y	at Kachemak Bay			
Karluk	3A		Y	Y	Y		funds req'std		
Larsen Bay	3A		Y	Y	Y		Y	under construction	
Nanwalek	3A			Y	Y	at Seldovia			
Old Harbor	3A	Y	Y	Y	Y		Y	Y	
Ouzinkie	3A			Y	Y		Y	Y	
Port Graham	3A			Y		at Seldovia	Y		
Port Lions	3A		Y	Y	Y		Y	Y	
Seldovia	3A	Y	Y	Y	Y	Y	Y	Y	
Tatitlek	3A			Y	Y			under construction	
Tyonek	3A	Y	Y	Y					
Yakutat	3A	Y	Y	Y	Y	Summer	Y	Y	Y
% Occurrence	2C	17%	61%	39%	83%	70%	78%	83%	26%
% Occurrence	3A	29%	57%	93%	71%	36%	71%	57%	7%
% Occurrence	Both	22%	59%	59%	78%	57%	76%	73%	19%

Source: State of Alaska DCED community profiles.

Among the 37 communities, Wrangell and Yakutat stand out as the only two communities with all the services or facilities listed. Both have more charter businesses (Wrangell has 15 and Yakutat has 19 licensed businesses). Wrangell and Yakutat also have tourism, deep-water ports, scheduled jet service and offer fresh and salt water sportfishing. Wrangell's deep water port allows large and small cruise ships to dock. Monti Bay in Yakutat is the only sheltered deep-water port in the Gulf of Alaska. These common attributes may have contributed to the development of charter businesses in these communities.

For the remaining communities that have existing charter businesses, nearly all have scheduled flights or access to the State ferry system. Most also have a small-boat harbor and docking or boat-launch facilities. Communities that do not yet have any licensed charter businesses also appear to lack scheduled transportation services (air or water) and/or lack a small-boat harbor and dock. For example, Edna Bay, Meyers Chuck and Port Protection in Area 2C have neither scheduled flights nor ferry service. Whale Pass lacks scheduled flights and has no small-boat harbor. In Area 3A, both Nanwalek and Port Graham have neither scheduled flights or a small-boat harbor although both have access to the State ferry terminal at Seldovia. An exception to this pattern is Hyder which appears to have transportation facilities, including a deep draft dock, to support charter operations and yet has no licensed charter businesses.

3.4.3 Client Demand and Start-Up Costs for Charter Businesses

One of the main goals of the community set-aside is to remove an economic barrier to entry into the charter industry for underdeveloped Gulf communities. The economic barrier under consideration is the one created by extension of the halibut IFQ program to the charter industry. That is, after the initial allocation, any new entrant into the industry would need to purchase halibut QS. The term 'underdeveloped' refers to Gulf communities that have not yet developed mature halibut charter businesses. Since these Gulf communities do not now need to purchase halibut QS to start a charter business, the set-aside would essentially preserve an existing opportunity rather than create any new economic opportunities for these communities. The question arises, however, as to whether these communities would be able to capture any benefits from the set-aside quota if other significant barriers to entry into the charter industry continue to exist. Why, for example, have a number of the 37 target communities failed to develop any charter businesses thus far?

This section provides some baseline information on the requirements to start and sustain charter operations in the targeted communities. The first subsection (3.4.3.1) discusses factors affecting client demand for charter trips in Areas 2C and 3A. The second subsection (3.4.3.2) provides an indication of start-up and operating costs for charter businesses. Other requirements, including halibut resource needs and requirements for financial resources, registration and licensing, and experience with business, fishing and boating will be discussed as part of the economic analysis of the community set-aside.

3.4.3.1 Factors Affecting Client Demand for Charter Trips

Unlike the commercial sector, utilization of the fish resource in the charter industry depends on the ability of the charter business to attract clients seeking guided charter services and on the ability of the clients to catch fish (albeit with equipment and assistance provided by the charter operator). An allocation of halibut for purposes of starting and developing halibut charter businesses will not by itself result in utilization of the resource if no client demand materializes. Therefore, consideration of the factors affecting client demand for guided charter services in Areas 2C and 3A is relevant to the decision of whether to set aside halibut quota for Gulf communities. In addition to the general characteristics of client demand in Areas 2C and 3A, it is also relevant to consider any unique issues for the small, rural communities targeted by the set-aside that may make it more difficult for these target communities to attract clients.

Some of the general factors affecting a charter company's potential ability to attract clients include the following: source and type of clients; the amount clients are willing to pay; the motivation and basis for selecting trip location and charter company; and advertising and marketing efforts made by the charter company. In addition, unique issues faced by the small, rural communities targeted for the set-aside include their remote location, availability and cost of transportation, and other facilities and services offered. These factors will be discussed in more detail next. Some of this information was provided earlier in Section 3.2, which presents baseline data on the charter fishery for the halibut charter IFQ analysis. In addition, distinctions will be made between Areas 2C and 3A whenever possible.

Source and Type of Clients

Sportfishing in Alaska is a recreational activity pursued by both residents and non-residents of Alaska. Results of the 1998 ADFG creel census, postal surveys (SWHS) provide a breakdown of the number of saltwater anglers between the charter and noncharter sectors and between resident and non-resident anglers. These results were shown earlier in Table 3.9 of Section 3.2. *Note that the survey results provide statistics on an area-wide basis (2C or 3A) and do not exclusively reflect the potential clientele of charter businesses based in the 37 communities targeted for the set-aside.*

In Area 2C, there were a total of 40,400 saltwater charter clients in 1998, representing 46% of all saltwater anglers (charter and noncharter). Of these charter clients, 37,976 or 94% were non-residents while 2,424 or 6% were residents. Locations in Area 2C most frequented by residents included Sitka (649 charter anglers) and Juneau (563), while nonresidents mostly fished out of Sitka (12,498) and Ketchikan (9,125). By contrast, Area 3A had more than twice the number of saltwater charter clients in 1998 (as compared to Area 2C), numbering 83,774 clients which represented 51% of all saltwater anglers for the area that year. Of these charter clients, 53,519 or 64% were non-residents while 30,255 or 36% were residents. Cook Inlet (west of Gore Point) was the most popular location among residents and non-residents alike, followed by locations along Prince William Sound.

These statistics indicate several important differences between clients of charter services in Areas 2C and 3A. In Area 2C, the vast majority of charter clients are non-residents, many of which arrive on cruise ships, the dominant mode of arrival for visitors to that area. Tourists arriving on cruise ships tend to face more time constraints and consume more half-day trips. These half-day trips, in turn, tend to target salmon over halibut since greater distances and time are needed to reach the more productive halibut grounds around the major charter ports. Finally, growth in client demand for charter services in Area 2C is likely more closely tied to growth in Alaska's cruise ship sector which has slowed in recent years. Moreover, based on public testimony during the December 2000 Council meeting, the main source of growth in the cruise ship sector appears to be older passengers who may be less inclined to take charter fishing trips.

By contrast, a larger percentage of clients of charter services in Area 3A are residents arriving from Anchorage and surrounding population centers. Compared to residents in Area 2C, fewer residents in Area 3A own or have access to a boat and instead may rely more on charter services. Non-residents typically arrive via domestic air travel, the dominant entry mode into Alaska, rather than cruise ships. Also, charter clients in 3A tend to take more full-day trips and target halibut more often.

Average Expenditures by Charter Clients

While statistics on average expenditures by charter clients do not fully reflect the amount such clients are willing to pay for charter services, average expenditures provide an indication of the amount a new charter company may be able to charge for its services. Lee et al. (1999a) conducted a survey as part of a study

of the economic impact of sport fisheries originating from the Kenai Peninsula. Data collected from 2,640 survey responses (from a sample of 4,000 anglers) provide estimates of angler expenditures, including fishing and non-fishing expenditures during 1997. Average daily expenditures broken down by residency status (Kenai Peninsula residents, Alaska residents or non-residents) for charter clients are shown in Table 3.39. *Note that these statistics may have limited applicability to charter businesses based in the 37 target communities. Compared to charter trips originating from the Kenai Peninsula, charter trips based in the target communities would likely exhibit a broader range of prices, reflecting the greater diversity of types of charter trips offered.*

Table 3.39 Average daily expenditures for charter trips off the Kenai Peninsula (\$)

	Local	Alaska	Non-Resident
Auto or Truck Fuel	7.82	15.81	8.08
Auto or RV Rental		3.97	18.92
Airfare		5.15	32.04
Other Transportation	0.70	1.83	2.33
Lodging	3.15	21.19	22.94
Groceries	8.00	13.76	9.93
Restaurant and Bar	10.74	13.95	9.63
Total Transportation and Lodging	30.41	75.66	103.87
Charter or Guide	112.86	116.40	140.75
Fishing Gear	2.00	3.58	15.50
Fish Processing	10.50	7.14	32.72
Derby	11.70	2.13	1.37
Total Fishing Expenditures	137.06	129.25	190.34
Total Non-Fishing Expenditures	30.41	75.66	103.87
Total Fishing Day Expenditures	167.47	204.91	294.21

As shown, expenditures are highest for non-residents who spend an average of \$104 for transportation and lodging and an additional \$190 for charter services and other fishing-related services. The cost of the charter trip (average of \$140.75) was the single most costly component of the fishing-related expenditures. For Alaskan residents and local residents of the Kenai Peninsula, fishing expenditures averaged \$129 and \$137, respectively. These somewhat lower costs for residents (as compared to non-residents) could be due to an increased ability to find a lower cost charter operator based on experience or word of mouth. Transportation and lodging expenditures averaged \$76 per day for non-local Alaskan residents and only \$30 per day for local residents. The fact that non-fishing expenditures are higher the further the angler needs to travel is likely a direct result of the transportation costs required to travel longer distances.

Thus, for charter trips originating from the Kenai Peninsula, costs for charter services (including fishing gear and processing) range from \$130-\$190 for a full-day trip. If transportation and lodging are included with the charter trip as a package, the cost may be closer to \$200-\$300 per day.

The average angler expenditures for trips originating from Kenai Peninsula may not be reflective of expenditures for trips originating from other locations in Area 3A or trips from locations in Area 2C. These issues were discussed earlier in Sections 3.2.3.5 and 3.2.3.6. For example, since an angler needs to fly into Yakutat, the distribution of transportation expenses likely differ from those found for trips originating from the Kenai Peninsula. It is also more likely that charter trips from Yakutat are offered as part of a package deal that includes transportation and lodging making it difficult to separate non-fishing expenditures from fishing expenditures. Fishing related expenses may be fairly similar across different charter ports throughout Area 3A.

For Area 2C, detailed economic data for the halibut charter fishery has not been collected. Significant differences between the charter fisheries in Areas 2C and 3A make it difficult to extrapolate the results of the Kenai Peninsula study to Area 2C. Some of the differences between the charter fisheries in Areas 2C and 3A include the following (based on discussions with industry and public comments received at the Council's December 1999 meeting):

- Non-residents in 2C are largely cruise-ship based with a small but avid class that fish out of lodges. Non-residents in 3A are mostly airplane/car/motor-home based.
- Many residents in 2C have their own boat while many residents in 3A hire a charter.
- Area 2C trips tend to be more multi-purpose with halibut effort taking place during combination trips that also target salmon. In 3A, there are dedicated halibut fleets and most halibut effort occurs on trips exclusively targeting bottomfish.
- Area 3A offers a viable and well developed freshwater fishery for salmon that may serve as a substitute for saltwater charter trips, whereas 2C lacks similar opportunities.

Instead, anecdotal data may provide some useful indication of the typical cost of charter trips in Area 2C. As discussed in Section 3.2.3.6, it appears that average fees paid for charter services are considerably higher in 2C than in 3A. For example, in Juneau where a reported 85% of trips are for salmon, prices ranged from \$150 to \$220 per person per full day, with a quoted average of \$180. Half day trips ranged from \$150 to \$190 but typically exclude halibut fishing because of the time necessary to travel to halibut grounds. Prices quoted for full day trips out of Petersburg ranged from \$165 to \$170 per day. These price quotes may be even less reflective of prices for charter trips based in the 37 target communities. Compared to the price range for charter trips based in the larger Area 2C ports, the price range for charter trips in the smaller communities would likely be broader, reflecting the greater variety of charter trips offered.

Basis for Choosing Trip Location and Charter Company

The motivation for taking a trip and basis for selecting the trip location are important factors that could limit client demand for charter services from the more remote communities targeted by the set-aside. Several surveys have been conducted that collected information on why anglers took the trip, frequency of locations chosen and reason for choosing location. In addition, some surveys also explored how charter companies were selected. The survey by Lee et al (1999a) was based on charter trips originating from the Kenai Peninsula. ISER (1999) conducted a state-wide survey of both resident and non-resident sport anglers based on angler activity or trips taken in 1993. In both cases, the survey results do not exclusively reflect information on anglers that take charter trips from the smaller communities targeted by the set-aside. Selective results of these surveys are summarized next.

The survey by Lee et al. (1999a) of anglers that made trips to the Kenai Peninsula in 1997 collected data on the primary purpose of the trip and frequency of location selected. As shown in Table 3.40, 88% of Alaskans indicated the primary purpose of the visit to the Kenai Peninsula was for "Fishing on Kenai" while only 43% of non-residents indicated it as the main purpose of the trip. Other primary purposes for trip reported by non-residents and percentages are as follows: Visit/Vacation to Alaska (24.4%), Kenai Freshwater fishing (12%), Visit with Relatives (11.2%). Residents also indicated "Kenai Freshwater Fishing" as a primary purpose 4.9% of the time. Since a lower percentage of non-residents viewed saltwater fishing off the Kenai as the primary purpose of the trip, the demand function for charter trips by non-residents may be more elastic. On the other hand, non-residents may be less likely to cancel their trip to the region if the saltwater charter trip is cancelled.

Table 3.40 Primary purpose of visit to Alaska for Kenai Peninsula saltwater halibut and salmon anglers from Lee et al. (1999) *by trip*.

	Alaskans	Non-Residents
Fishing on Kenai main reason	87.7%	43.0%
Visit/Vacation Alaska	2.5%	24.4%
Kenai Freshwater fishing	4.9%	12.0%
Relatives	2.0%	11.2%
Business	1.0%	3.7%
Saltwater/freshwater fishing	0.5%	2.5%
Visit Friends	1.5%	0.4%
Cruise Ship	0%	1.2%
Hunting	0%	1.7%

Table 3.41 Location(s) where respondents fished (launched) on the Kenai Peninsula during most recent trip.

	Frequency	Percent*
Homer	419	45%
Seward	292	32%
Deep Creek/Ninilchik	274	30%
Kenai	116	13%
Anchor Point	77	8%
Seldovia	10	1%
Other	12	1%

*The percent column does not sum to 100% since several respondents used multiple launch or fishing sites during their trip.

Lee et al.(1999) showed that Homer was the most popular location, chosen by 43.4% of respondents, followed by Seward (chosen by 31.5% of respondents) and Deep Creek/Ninilchik (chosen by 29.5% of respondents) (Table 3.41). Seldovia, which can be reached only by air or water, ranks seventh with only 1.1% of respondents choosing to fish there. These results indicate that locations that are accessible by road are more frequently chosen and may be the preferred location for anglers primarily interested in halibut fishing. On the other hand, due to the additional time and money required to go to a port like Seldovia, such ports may need to offer other services or recreational opportunities to attract visitors.

ISER (1999) conducted a survey of both resident and non-resident sport anglers based on angler activity or trips taken in 1993. The survey included questions on why respondents fished, where they fished and how various factors weighted in their decisions about where to fish. Since the survey included both guided and non-guided anglers, the results are not strictly reflective of charter clients. Since, however, the survey was conducted state-wide and included non-resident sport anglers, the results provide a profile of angler preferences and activity across regions in Alaska. (Details of the survey results are provided in ISER 1999.)

The ISER survey results indicate that both resident and non-resident anglers view fishing as a recreational activity to be engaged in with family or friends. Both resident and non-resident anglers indicated that the abundance of fish (i.e., the potential to catch fish) was a very important factor in their choice of fishing location. Compared to resident anglers, non-resident anglers placed more importance on the area having exceptional beauty and, although still relevant, road access, travel cost and travel time were relatively less important. Finally, word-of-mouth was the main source of information about fishing locations, while advertising and tourist brochures were more important for non-residents than for residents.

The ISER survey results are supported by a somewhat more dated survey conducted by Coughenower (1986) which collected information on clients of charter fishing services based in Homer, Alaska. This study found that most clients (38%) chose a charter company based on the recommendation of others, with ‘Good reputation’ and ‘Success in past’ ranking as the second and third most frequent reason for selecting a particular charter company. Importantly, over 80% of customers chose the charter company for reasons that had nothing to do with advertising by the company.

Despite the apparent low importance that advertising plays in attracting clients, Coughenower (1986) indicated that advertising is an important expense for charter operators, not including time spent during the winter season (and associated opportunity cost) to market and recruit clients. All charter companies that participated in the survey used brochures, while signs, yellow pages, and boat shows were also heavily used.

3.4.3.2 Start-Up and Operating Costs for Charter Businesses

The community set-aside is intended to remove an economic barrier to entry into the charter industry created by extension of the halibut IFQ program to the charter sector. After the initial allocation, a new charter business may need to purchase halibut QS to satisfy client needs. Elimination of this cost for qualifying individuals in target Gulf communities would preserve access to the resource that such individuals now have. Any benefits from the community set-aside would be realized only if charter businesses were started and sustained. Even if the cost of purchasing halibut QS were eliminated, new charter businesses would need to make a significant investment in transportation and fishing-related equipment. In addition, new charter businesses may need to fund other operating expenses and may experience delays in recouping such outlays until client demand materializes. Finally, there are significant personal and financial risks including opportunity costs associated with starting up a charter business for which success will depend ultimately on the ability to attract and build a client-base. The start-up costs, initial operating expenditures and financial risk represent other significant barriers to entry into the charter industry that may overwhelm the cost of halibut QS purchases.

This section provides an indication of the magnitude of start-up and operating costs associated with starting and building a halibut charter business in the Gulf of Alaska. Good estimates of these costs would require extensive market research and industry surveys. Instead, this analysis summarizes the findings of several past studies.

Several studies have been conducted relevant to the economics of the charter fishing industry in Alaska: Coughenower (1986), Wiese (1989), Haley et al. (1999) and Herrmann et al. (2000). Haley et al (1999) estimated the contribution of sport fishing to the economy of Alaska. It includes results of a survey of fishing guides and charter operators active in 1993 (henceforth referred to as the ISER Guide and Charter Survey). Herrmann et al. (2000) provided an economic assessment of sport fisheries in Lower Cook Inlet. It includes parameter values for the estimated average production function for the marine charter sector. Information on start-up and operating costs is summarized next based on these two studies.

ISER Guide and Charter Survey Findings

ISER conducted a mail-out and telephone survey in early 1994 of Alaska guide and charter businesses to collect information on business revenues, including proportion attributable to sport fishing and related activities (guiding, transportation and lodging). The survey included businesses providing guide services to anglers and businesses that provided transportation to fishing locations and, thus, is based on a broader definition of “guide” than that used in the ADFG guide registration program. The survey resulted in a finished sample of 331 businesses, representing a 73% response rate for large firms and 27% response rate for other firms (for

an overall response rate of 29%). Data collected included general descriptions of the businesses, capital expenditures, equipment owned and location of business. **Since the highest response rate was from the stratum of firms identified by regional biologists as the major guide or charter businesses in their regions, the results may be more reflective of these larger charter businesses and less representative of small and/or start-up charter businesses.** Nevertheless, the survey results provide an indication of the magnitude of the capital investment and operating costs associated with a charter business.

ISER Guide and Charter Survey Methodology (excerpt from Haley et al. 1999)

The mail-out and telephone survey was conducted in the Spring of 1994. ISER started with a list ADF&G provided of 1,983 businesses offering guide and charter services in Alaska. The list included businesses that provided transportation to fishing locations and, thus, was based on a broader definition of “guide” than used in the ADF&G guide registration program. Of the 1,983 businesses, 344 reported to ADF&G (by return post-card) that they were not in the guide and charter business and 116 post-cards were undeliverable. Thus, ISER mailed a detailed questionnaire to the remaining 1,523 businesses on the ADF&G list and conducted a follow-up by telephone. The response rate was very low, even with the telephone follow-up.

A second mailing was done based on a sample drawn from the same survey list, to be followed by a telephone contact and interview by ISER personnel. The sample consisted of two strata: (a) 46 firms identified by regional biologists as the major guide or charter businesses in their regions and expected to be a self-representing stratum; and (b) a random sample of 148 businesses from the original list of 1,523 businesses. Thirty-two of the second stratum had already returned surveys so the follow-up mailing consisted of 162 surveys.

ISER completed interviews with 29 of the major guide and charter businesses and with 64 of the random sample of the remaining businesses. An additional 238 questionnaires were returned by mail. The finished sample included 331 businesses.

A major portion of the survey was information on expenditures and employment, including the location of expenditures and the residence of employees. ISER also got general descriptions of the businesses and data on capital expenditures, equipment owned and location of business.

Weighting factors were based on two strata:

1. The self-representing big firms: Of the 46 in the initial list, 29 interviews were completed, 6 reported they were not in the G&C business, 9 didn't respond and 1 was unknown, for a response rate of $29/40=72.5\%$. The weight for these firms is then $40/29 = 1.38$.

2. Other firms: Since no significant differences were found between the 238 responses received by mail and the 64 additional responses by interview, these were combined into a single stratum of 302 businesses. Of the 1,523 on the initial list, 46 were moved to the “big firms” group, but 13 businesses were added, leaving 1,490. Of these 1,490 businesses, ISER estimated that 1,111 firms provided guided and charter services to sport anglers. Thus, the response rate was $302/1,111 = 27\%$ and the weight for these firms is then $1,111/302 = 3.68$.

PUBLIC REVIEW DRAFT

To develop a more representative profile of charterboat operators in Area 2C and 3A, ISER (A. Hill, pers. commun.) assisted in refining the survey data set. Operators in the Arctic-Yukon-Kuskokwim and Southwest regions were eliminated. Respondents that specified a target species but did not include halibut were also removed (although respondents that did not respond to the target species question were retained). This reduced the sample size from 331 down to 236. ISER indicated that property expenditures were much higher for respondents that did not specify a target species; guide businesses that also manage lodges may have viewed the survey question on target species as less relevant to their businesses. Equipment expenditures were reasonably consistent across respondents.

Table 3.42 shows statistics on equipment expenditures based on the sample of 236 guide businesses. Respondents were requested to itemize equipment purchases during the previous five years and indicate purchase cost. About 80% of the businesses (192) reported expenditures for boats. The mean boat expenditure was \$84,000 and the median boat expenditure was \$45,000. Since some businesses owned more than one boat, the average boat cost was also calculated. The mean expenditure per boat was \$56,000 and the median expenditure per boat was \$34,000. Almost half of the respondents (109) reported other boat equipment expenditures, including expenditures on engines, trailers, skiffs, canoes, radios, and radar/sonar equipment. The mean expenditure for other boat equipment was \$14,000 and the median expenditure was \$5,400. About one-third of the respondents reported vehicle expenditures but less than 5% reported expenditures for aircrafts or other fishing equipment. For all equipment, the mean equipment expenditure was about \$105,000 and the median equipment expenditure was \$55,000. The large difference between the average and median indicates that a few businesses have very large expenditures, skewing the average higher.

Table 3.42 ISER Guide Survey -- Equipment Expenditures (Based on Purchase Cost)

	Fishing Equip.	Boat	Average Boat Cost	Vehicle	Aircraft	Other Boat Equip.	All Equip.
Number w/ expenditure	10	192	192	81	9	109	220
Number w/out expenditure	226	44	44	155	227	127	16
Mean	6,625	83,791	56,066	20,895	276,539	14,201	104,675
Std Err Mean	2,325	9,985	5,914	2,590	106,214	2,868	11,780
Median	3,750	45,000	34,000	16,500	215,000	5,400	55,166
Percentiles							
25%	1,500	22,125	15,000	7,250	22,500	2,400	30,000
50%	3,750	45,000	34,000	16,500	215,000	5,400	55,166
75%	9,250	94,250	60,000	24,500	421,500	12,995	113,625

Table 3.43 ISER Guide Survey – Property Expenditures (in 1993 dollars)

	Lease or Mortgage	Property Tax	Utilities	Mainten.	Insurance	Other	Property Overall
N Reporting	78	79	78	76	79	79	81
N Missing	158	157	158	160	157	157	155
Mean	19,007	1,317	4,616	6,968	4,599	29,460	63,788
Std Err	8,504	216	1,247	2,797	1,302	13,722	18,679
Median	3,050	511	2,000	1,646	1,300	-	13,400
Percentiles							
25%	-	-	360	500	500	-	4,943
50%	3,050	511	2,000	1,646	1,300	-	13,400
75%	11,125	1,900	4,275	5,057	4,555	4,500	37,069

Table 3.43 shows statistics for property expenditures. About one-third of the 236 respondents in the sample reported expenditures in this category. While the sample was not divided by geographical location, ISER indicated that the majority of businesses with property were located in Area 2C. Expenditures in this category included lease or mortgage payments, property taxes, utilities, maintenance, insurance and other property expenses. Overall, the mean property expenditure was almost \$64,000 per year (in 1993 dollars). This result, however, may be skewed due to the very large mean expenditure reported in the ‘other’ category. Thus, the percentile breakpoints may provide a better indication of this type of expenditures. Half of the respondents reporting property expenditures of \$13,400 or less. Three-fourths of those reporting property expenses, spent \$37,000 or less.

Finally, the survey collected information on operating expenses for the guide and charter businesses (Table 3.44). The results show that payroll and non-payroll employee expenses account for the most significant portion (almost 38%) of the business’ operating expenses. Transportation costs accounted for almost 30% of expenses, followed by administration (9.7%), and advertising and accounting services (9%). Overall, the mean total operating expense was just over \$100,000 per year. Based on the percentile cutoff values, half reported annual operating expenses of \$27,400 or lower, and three-fourths reported expenses \$76,700 or lower. It is important to note that a substantial portion of these expenses would be incurred regardless of whether any clients hired the charter business’ services. That is, without ever leaving the dock, a start-up charter businesses would need to fund most of these operating expenses. For example, if the typical angler is willing to pay a range of \$130 to \$190 per trip for guided charter services, a business with annual operating expenses of \$27,400 (based on the median) would need an estimated 144-210 clients just to cover operating expenses. If the typical charter vessel can take six clients, the charter business would need to make 24-35 trips. For a business with annual operating expenses closer to \$77,000 (i.e., the 75 percentile cutoff), an estimated 67-98 trips would be required. If each boat typically makes about 50 trips per year, these larger businesses may need to operate two or more vessels to be profitable.

Based on these ISER guide survey results, a start-up company may need roughly \$50,000 to \$100,000 in investment capital (to purchase transportation and fishing equipment) and an additional \$30,000 to \$75,000 in funding to cover the first year’s operating expenses. If the business also required an investment in property, an additional \$10,000-\$40,000 to cover property-related expenses would be needed (although businesses that included lodging along with charter fishing may be able to charge higher prices). In any event, unless the business is successful in attracting a reasonable number of clients in the first few years, the potential cumulative operating losses could be substantial.

Table 3.44 ISER Guide Survey -- Operating Expenditures (in 1993 Dollars)

Variable Description		N	Mean	Std. Err	Median	Percent of Total	25%	50%	75%
Total Payroll	G1	208	37,014	8,305	7,000	33.7%	104	7,000	24,500
% Related to Sp Fish	G2	195	73	3	100		50	100	100
Total Emp Non-Payroll	G3	171	5,266	1,602	100	3.9%	-	100	3,000
Total Transport Exp	G4	223	30,170	5,603	10,117	29.5%	4,200	10,117	29,000
Vehicle leases	G4_1	108	13,292	3,098	6,150		1,785	6,150	12,750
Fuel & operations	G4_2	213	9,153	1,361	4,000		1,500	4,000	7,915
Maintenance	G4_3	206	9,265	2,126	2,612		1,000	2,612	6,277
Other transp. Exp.	G4_4	106	10,633	4,570	1,000		500	1,000	3,250
Total Services Exp	G5	221	9,281	1,925	1,400	9.0%	375	1,400	6,000
Advertising	G5_1	180	7,518	1,770	1,238		481	1,238	5,432
Legal & Accounting	G5_2	146	2,179	477	500		299	500	1,703
Other services	G5_3	75	4,878	1,675	1,000		300	1,000	2,900
Total Subcontracts	G6	222	6,388	1,780	-	6.2%	-	-	-
Total Administration	G7	222	9,965	2,425	2,480	9.7%	1,300	2,480	6,450
Office expenses	G7_1	131	3,721	774	900		200	900	3,800
Insurance	G7_2	197	7,519	2,310	2,000		1,200	2,000	4,500
Other Admin	G7_3	73	2,743	569	999		300	999	3,000
Taxes	G8	215	1,836	450	60	1.7%	-	60	750
Other	G9	219	6,563	2,536	-	6.3%	-	-	1,900
Total Operating		227	100,621	19,236	27,400	100.0%	10,331	27,400	76,678

Cook Inlet Study

The Cook Inlet study by Herrmann et al. (1999) included a typical production function for a charter operator active in sportfishing in Lower Cook Inlet. This production function provides relative measures of operating expenditures on various production factors. While the magnitude of these expenses are not indicated, the relative measures provide a useful cross-check to the ISER survey results shown in Table 3.44. The Cook Inlet study does not, however, provide any direct measures of start-up capital requirements although loan payments for equipment items such as a boat are included as an operating expense. The estimated average production function for the marine charter sector is shown in Table 3.45.

Compared to the ISER survey results, the production function developed in the Cook Inlet study indicates a similar breakdown in operating expenses. It indicated that 37.4% of the operating expenses are in the payroll or value-added category, versus 33.7% in the ISER survey. It also indicates somewhat higher administrative costs but lower transportation and service expenditures (in terms of proportion of operating expenses). Taxes, however, are much higher in the Cook Inlet production function (7.8%) than in the ISER survey (1.7%). Once again, it is important to note that the charter business would incur most of these expenses regardless of whether any client demand materialized.

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Table 3.45 Estimated Average Production Function Coefficients for Marine Charter Sector

Expense Category	Coefficient (%)	Expense Category	Coefficient (%)
Value Added (incl. Payroll)	37.41%	Services	7.22%
Employee Compensation	11.47%	Advertising	4.10%
Proprietor Income	19.49%	Professional Services	0.98%
OPTI	3.39%	Trade Shows	2.14%
Indirect Bus Tax (Sales Tax)	3.06%	Contract Services	0.35%
Non-Payroll Employee	2.05%	Administration	12.16%
Entertainment	0.09%	Computer Total	0.66%
Medical	0.15%	Office Supplies	1.35%
Travel	1.81%	Insurance	3.92%
Transportation Expenses	27.94%	Licenses	2.43%
Electronic Supplies	0.04%	Utilities	3.80%
Fuel & Lubrication	13.56%	Taxes	7.85%
Gear Replacement	2.16%	Federal Income Tax	4.16%
Hull Repair	0.54%	Borough Tax	3.69%
Interest Paid (Boat)	5.42%	Other	5.00%
Moorage & Boat Storage	1.82%	Bait	1.33%
Repair/Maint/Tools/Supplies	1.30%	Dues	1.39%
Total Boat Maintenance	1.32%	Groceries	0.08%
Truck Exp.	1.78%	Subscriptions	0.18%
		Work Gear/Client Supplies	2.02%

3.4.4 Community Needs for Economic Development Opportunities

3.4.4.1 Economic Status of Target Communities

The Coalition proposed general criteria to define eligibility for Area 2C and 3A communities to receive set-aside quota. Communities located in these areas must be fishery-dependent, coastal, not connected to the road system, and have populations less than 2,500. As stated previously, 23 communities in Area 2C and 14 in Area 3A appear to qualify under the proposed criteria. An additional factor not specified as eligibility criteria but that may affect the number of communities deemed eligible is the provision for a community cap on halibut charter quota, inclusive of any privately owned quota. Preliminary data indicate that at least one community in Area 3A and four in Area 2C with existing charter operations may receive sufficient halibut charter quota during initial allocation to preclude qualifying for community set-aside quota. This assumes that communities would be subject to the Coalition's proposed community cap of 50,000 lbs, or a similar amount.

The criteria are intended to target a set of communities that need expanded economic opportunities through additional halibut charter businesses. The community cap provision filters out communities that may meet the geographic and demographic criteria but do not need additional halibut charter quota via the set-aside to develop a halibut charter base. Without a provision to limit eligibility to communities that will essentially receive very limited quota in the initial allocation *and* are lacking in alternative economic opportunities, many other communities or potential stakeholders could argue that they too should benefit from reduced economic barriers to entry into the halibut IFQ program. This section provides general demographic and economic information on the proposed eligible communities to help evaluate community needs for expanded economic development opportunities provided by the set-aside.

Table 3.46 provides an overview of population and economic statistics for the proposed 23 eligible communities, based on data provided by the DCED from the April 1990 census. Note that the poverty level

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of these communities is based on the 1990 national standard, and is not adjusted specifically for Alaska. This definition is based on the size of the household and is applicable to the 1990 census data only. The 2000 census data will not be available until later this year, and the national poverty standard will be adjusted as necessary at that time.

General demographic statistics show that of the 23 subject communities in Area 2C, nine of those have Federally-recognized Alaska Native organizations (Tlingit, Haida or Tsimshian), and six have Alaska Native populations greater than 50%. Half of these communities have Alaska Native populations less than 10%. Area 3A communities exhibit greater uniformity: 13 of the 14 eligible communities have Federally-recognized Alaska Native organizations, Halibut Cove being the one exception. Most are established Alutiiq villages, and two have Athabascan origins (Tlingit and Dena'ina Indian). Of these 14 communities, half have Alaska Native populations greater than 80%, and 11 have Alaska Native populations exceeding 50%.

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Table 3.46. Demographic and Economic Statistics of Communities Eligible for the Proposed Set-aside

AREA 2C Communities	Population (1990 Census)	Incorporation Type ¹	Native Org. ²	% Native Pop.	Median Value/Home (\$)	Housing Units Occup./Total	Average # Persons per Household	Median Household Income (\$)	Estimated # Jobs	% Unemployment	% Adults not in the Workforce	% At or Below Poverty Level
Angoon	601	2	X	82.3	54,200	156/166	4.0	32,083	179	35.1	54.1	21.9
Coffman Cove	254	2		7	26,300	73/81	2.3	44,063	99	14.7	29.8	4.7
Craig	1,946	1	X	22.9	94,000	444/504	2.8	47,250	633	8.4	25.9	3.9
Edna Bay	79	U		0	27,500	25/29	3.4	12,250	21	67.2	67.2	63.7
Elfin Cove	48	U		1.8	100,000	23/44	2.4	43,125	28	0	28.2	7.1
Gustavus	328	U		3.9	75,000	101/218	2.5	41,538	124	4.6	26.2	3.6
Hollis	106	U		2.7	50,000	43/71	2.5	31,250	44	8.3	44.3	15.2
Hoonah	903	1	X	67.2	59,500	242/268	3.2	36,442	321	14.9	35.4	3.8
Hydaburg	406	1	X	89.1	60,000	118/135	3.2	20,139	104	21.8	60.5	26.3
Hyder	138	U		1	60,000	45/58	2.2	23,750	51	22.7	47.4	14.4
Kake	696	1	X	73.4	59,000	220/265	3.1	35,875	253	10.9	46.8	7
Kassan	41	2	X	53.7	55,000	19/30	2.8	46,667	11	64.5	73.8	0
Klawock	759	1	X	54.3	75,900	240/281	3.0	39,583	267	17.3	48.4	8.4
Metlakatla	1540	R	X	49.2	68,800	448/527	3.2	38,370	488	12.8	49.2	9.8
Meyers Chuck	35	U		10.8	71,300	13/34	2.8	16,250	11	0	54.2	33.3
Pelican	209	1		29.3	67,500	81/98	2.3	27,083	140	3.4	17.2	13.6
Point Baker	62	U		0	30,000	21/28	1.8	12,083	10	0	73	0
Port Alexander	98	2		2.5	39,400	39/64	3.0	20,625	46	11.5	31.3	18.2
Port Protection	64	U		1.6	37,500	29/40	2.1	10,000	2	75	95.3	45.6
Tenakee Springs	107	2		9.6	87,500	51/139	1.8	18,125	20	20	74	10.8
Thorne Bay	650	2		1.2	56,700	203/242	2.9	39,688	241	18.6	38.4	5.2
Whale Pass	92	U		2.7	27,500	28/40	2.6	49,583	18	35.7	59.1	14
Wrangell	2479	H	X	20	88,300	942/1,054	2.6	37,538	1,189	9	34.1	6
AREA 3A Communities	Population (1990 Census)	Incorporation Type ¹	Native Org.	% Native Pop.	Median Value/Home (\$)	Housing Units Occup./Total	Average # Persons per Household	Median Household Income (\$)	Estimated # Jobs	% Unemployment	% Adults not in the Workforce	% At or Below Poverty Level
Akhiok*	80	2	X	93.5	67,500	19/35	4.0	42,500	26	18.8	50.9	2.4
Chenega Bay	96	U	X	69.1	88,300	29/34	3.0	22,083	36	14.3	41.9	26.6
Halibut Cove*	78	U		3.8	133,300	23/93	1.7	68,760	86	0	-	0
Karluk*	58	U	X	91.5	91,700	18/27	3.9	31,250	30	9.1	40	3.6
Larsen Bay*	130	2	X	84.4	74,100	44/74	3.3	39,750	36	40	67.6	3.1
Nanwalek*	162	2	X	91.1	52,500	42/51	3.7	46,563	30	46.4	66.7	11
Old Harbor*	310	2	X	88.7	49,100	87/112	3.2	16,875	42	39.1	75.9	31.5
Ouzinkie*	259	2	X	51.9	83,800	68/82	3.0	48,393	77	18.9	51.9	10.2
Port Graham*	170	U	X	90.4	72,500	60/68	2.7	33,750	41	38.8	62.4	2.1
Port Lions*	233	2	X	67.6	80,400	73/103	3.0	40,938	85	14.1	41.8	5.3
Seldovia*	289	1	X	15.2	75,900	129/221	2.4	27,500	97	11.8	50.3	16.2
Tatitlek	124	U	X	86.6	60,000	33/52	3.6	27,188	15	0	75.8	19.8
Tyonek*	154	U	X	U	23,800	55/92	2.8	11,591	33	37.7	64.5	37.1
Yakutat*	801	H	X	55.1	67,200	240/254	2.9	36,875	254	11.8	33.7	10.5

Source: Alaska Dept. of Community and Economic Development data, 1990 census.

*Denotes that the community is located within an organized borough.

¹Incorporation Type: 1 = 1st class city; 2 = 2nd class city; U = unincorporated; R = Indian reservation; H = home rule city.

²This column indicates whether a Federally-recognized Native organization is located within the community.

The estimated number of jobs in these communities is relatively low, as would be expected in communities with such small, and often seasonal, populations. In Area 2C, the four largest communities by population are Craig, Hoonah, Metlakatla, and Wrangell, each with populations of 900 or above. These communities also support the largest number of jobs. Many of these communities also do not have a majority of adult residents in the workforce. The average unemployment rate across all Area 2C communities is about 21%, with about 48% of all adults in the workforce. This is common for remote coastal villages in which the focus may be a retirement, subsistence, or secluded lifestyle.

Yakutat is by far the largest community in the eligible Area 3A list, followed by Old Harbor, Seldovia, and Ouzinkie. Five of the 14 communities report unemployment levels greater than 20%, with the average unemployment level at about 21% across all Area 3A communities. Similar to Area 2C, an average of 56% of all adults residing in these Area 3A communities are not in the workforce.

By comparison, the state-wide unemployment rate in April 1990 was 7.3%. That same year, the Kenai Peninsula Borough, in which most of the targeted Area 3A communities are located, reported an unemployment rate of 12.5%. Of the 14 proposed eligible communities in Area 3A, all but two reported higher unemployment rates than the state average, and nine reported higher unemployment rates than the Kenai Peninsula Borough. Likewise, although none of the proposed eligible Area 2C communities are located within an organized borough, the Skagway-Hoonah-Angoon census area reported an unemployment rate of 10.5% in April 1990. All but five of the 23 targeted Area 2C communities reported an unemployment rate higher than the state average in April 1990, and all but eight reported higher unemployment rates than the Skagway-Hoonah-Angoon census area as a whole.

The median household income in Area 2C ranges from \$10,000 in Port Protection to \$49,583 in Whale Pass (in 1990 dollars). The average median household income is \$31,450; 13 communities have household incomes above the average, and 10 beneath it. Area 2C also averages 2.7 persons per household. As expected, those communities reporting lower median incomes also report higher poverty levels, up to 63.7% in Edna Bay. The average poverty level across all 2C communities is 14.6%. Median household incomes increase in Area 3A, ranging from \$11,591 in Tyonek to \$68,760 in Halibut Cove. The average median household income in Area 3A is \$35,287, with an average of 3.1 persons per household. The poverty level also encompasses a wide range—from 0 - 37.1%, with an average across all 3A communities of 12.8%.

Table 3.47 shows the status of ongoing capital improvement projects in the eligible communities in each area. Completed and potential (planned, but not funded) projects are excluded from this list. This data shows the number of projects related to general infrastructure that are currently being funded and undertaken in each community, as well as the level of funding necessary to support each project. The portion of funding provided by the community, as opposed to a government agency or other source, is also provided. Lastly, any projects that are fisheries-related, such as harbor maintenance or dock construction, are identified. Note that this information does not indicate how many communities have existing docks or fishery-related infrastructure in place, nor does it take into account any fisheries-related projects in the planning stage that are not currently funded.

This information is provided solely to relate the magnitude of funding currently being received by these communities for general infrastructure projects. Whether or not a community is capable of supporting a charter business is not analyzed in this section. A relatively well-developed infrastructure is likely important to the success of any fisheries-related business, especially a business relying on outside clients. While dock and harbor development are necessary, general infrastructure projects including roads, storage facilities, and water treatment facilities are also important considerations.

Two communities (Meyers Chuck and Halibut Cove) have not reported any major infrastructure projects at this time, while others, such as Metlakatla, Wrangell, and Yakutat, have a multitude of ongoing capital improvement projects (Table 3.47). About 28 of the 243 ongoing projects in Area 2C and 8 of the 127 projects in Area 3A are related to dock and/or harbor development. Examples of these types of projects include harbor dredging, dock upgrades, or construction of a boat ramp. The range of cost-sharing among communities widely varies. While a few communities do not report contributing any funding to current projects, some are matching a significant portion of outside funding sources. Using the upper bound of the range as an example, Wrangell is receiving over \$34 million for capital improvement projects through 2001, with local contributions exceeding \$6 million, or 17.2%.

3.4.4.2 State and Federal Economic Development Programs

As part of the analysis for the CSA program, the Council requested an evaluation of the ability of alternative mechanisms, such as existing loan programs, to meet the stated goals of the set aside. Three loan sources for the acquisition of limited entry permits or quota shares are:

1. The North Pacific Loan Program managed by the NMFS Financial Services Branch in Seattle, Washington;
2. Alaska Division of Investment Commercial Fishing Revolving Loan Fund whose goals are to:
 - a) promote Alaska's commercial fishing industry;
 - b) preserve commercial fishing as a traditional way of life in rural Alaska;
 - c) reduce the flow of permits from rural Alaska ; and
3. Alaska Commercial Fishing & Agriculture Bank (CFAB) which offers financing to Alaska residents for fishing vessels, IFQ and Alaska limited entry permits.

The North Pacific Loan Program

Section 304(d)(4) of the Magnuson-Stevens Act reads:

- A. Council may submit, and the Secretary may approve and implement, a program which reserves up to 25 percent of any fees collected from a fishery under section 304(d)(2) to be used, pursuant to section 1104A(a)(7) of the Merchant Marine Act, 1936 (46 U.S.C. App. 1274(a)(7)), to issue obligations that aid in financing the--
 - (i) purchase of individual fishing quotas in that fishery by fishermen who fish from small vessels; and
 - (ii) first-time purchase of individual fishing quotas in that fishery by entry level fishermen.
- B. A Council making a submission under subparagraph (A) shall recommend criteria, consistent with the provisions of this Act, that a fisherman must meet to qualify for guarantees under clauses (i) and (ii) of subparagraph (A) and the portion of funds to be allocated for guarantees under each clause.

Since the original funding source for this program is from cost recovery fees, which in statute are based on ex-vessel value, it is not clear whether Congress considered and/or intended that the guided sport sector be included in either the collection of fees or in the application of the North Pacific Loan Program (NPLP) to this sector (note references to commercial vessel size categories). The Council may wish to recommend an amendment to the MSA to include the charter sector into both such programs (fee recovery and loan program) depending on its preferred alternative.

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Table 3.47: Capital Improvement Project Statistics of Communities Eligible for the Proposed Set-Aside

AREA 2C Communities	# Ongoing Projects (Funded)	# Ongoing Harbor/Dock Projects	Estimated Total Costs (\$)	Community Share of Cost (\$)	AREA 3A Communities	# Ongoing Projects (Funded)	# Ongoing Harbor/Dock Projects	Estimated Total Costs (\$)	Community Share of Cost (\$)
Angoon	15	0	3,942,946	341,087	Akhiok*	7	0	246,562	9,785
Coffman Cove	14	1	20,476,682	1,837,962	Chenega Bay	10	0	1,009,872	8,000
Craig	10	1	21,626,243	4,010,623	Halibut Cove*	0	0	n/a	n/a
Edna Bay	6	1	95,305	4,768	Karluk*	4	0	878,264	0
Elfin Cove	4	1	104,332	3,967	Larsen Bay*	12	4	10,192,175	5,136
Gustavus	6	1	4,479,333	3,968	Nanwalek*	5	0	6,581,218	494,250
Hollis	3	2	7,926,317	1,316	Old Harbor*	11	0	2,368,378	2,733
Hoonah	16	0	7,443,672	83,338	Ouzinkie*	10	2	6,996,216	801,316
Hydaburg	10	0	437,050	5,263	Port Graham*	8	0	4,301,726	196,000
Hyder	5	0	868,633	318,632	Port Lions*	14	0	2,917,288	9,449
Kake	14	2	31,443,783	2,173,211	Seldovia*	6	1	3,005,464	63,702
Kassan	6	0	174,825	8,542	Tatitlek	14	1	4,438,969	468,923
Klawock	14	2	11,963,747	214,172	Tyonek*	8	0	1,441,860	0
Metlakatla	25	6	25,226,050	602,422	Yakutat*	18	0	14,463,078	83,514
Meyers Chuck	0	0	n/a	n/a					
Pelican	9	3	1,030,520	257,728					
Point Baker	2	0	49,043	1,316					
Port Alexander	6	0	241,242	32,246					
Port Protection	5	0	239,320	2,650					
Tenakee Springs	6	0	939,375	8,338					
Thorne Bay	10	2	6,693,056	12,291					
Whale Pass	5	1	138,356	3,170					
Wrangell	52	5	34,445,307	6,014,888					

Source: Alaska Dept. of Community and Economic Development.

*Denotes that the community is located within an organized borough.

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Section 108(g) NORTH PACIFIC LOAN PROGRAM.--

(1) By not later than October 1, 1997 the North Pacific Fishery Management Council shall recommend to the Secretary of Commerce a program which uses the full amount of fees authorized to be used under section 303(d)(4) of the Magnuson Fishery Conservation and Management Act, as amended by this Act, in the halibut and sablefish fisheries off Alaska to guarantee obligations in accordance with such section.

(2) (A) For the purposes of this subsection, the phrase 'fishermen who fish from small vessels' in section 303(d)(4)(A)(i) of such Act shall mean fishermen wishing to purchase individual fishing quotas for use from Category B, Category C, or Category D vessels, as defined in part 676.20(c) of title 50, Code of Federal Regulations (as revised as of October 1, 1995), whose aggregate ownership of individual fishing quotas will not exceed the equivalent of a total of 50,000 pounds of halibut and sablefish harvested in the fishing year in which a guarantee application is made if the guarantee is approved, who will participate aboard the fishing vessel in the harvest of fish caught under such quotas, who have at least 150 days of experience working as part of the harvesting crew in any United States commercial fishery, and who do not own in whole or in part any Category A or Category B vessel, as defined in such part and title of the Code of Federal Regulations.

(B) For the purposes of this subsection, the phrase "entry level fishermen" in section 303(d)(4)(A)(ii) of such Act shall mean fishermen who do not own any individual fishing quotas, who wish to obtain the equivalent of not more than a total of 8,000 pounds of halibut and sablefish harvested in the fishing year in which a guarantee application is made, and who will participate aboard the fishing vessel in the harvest of fish caught under such quotas.

In FY2000, the NPLP had \$5 million in loan authority for IFQ loans for entry-level fishermen who fish from small boats. To be eligible, an applicant must be a crew member on board the vessel that harvests the IFQ. It provides loans for 80% of the value (20% down) of the purchase of up to 50,000 lb of IFQs by applicants who may own, in whole or in part, any processing vessel or fishing vessel longer than 60 ft in the halibut or sablefish fisheries. The loan period is up to 25 years. Applicants cannot own more than 50,000 lb of IFQ, including the IFQ purchased through the NMFS loan program. It will also refinance debt used to purchase QS. Other projects available for financing or refinancing are shoreside facilities, aquaculture farms, and commercial fishing vessels (with some limitations).

The NMFS loan program will be financed after 2000, in part, by the cost recovery fee on the ex-vessel value of IFQ harvests. Congress has appropriated \$100,000 to leverage \$5 million in actual loan funds for fiscal year 2000. NMFS recently announced that the fee for 2000 would be 1.8% for collection of \$3.4 million in FY2000 fees. For every \$100,000 generated by IFQ fees for the loan program, about \$5 million will be available to loan applicants. One-fourth of the fee (\$850,000) will be deposited in the U.S. Treasury and available to Congress to appropriate in support of the loan program in FY2001 (perhaps up to \$42.5 million). The waiting list for the loan program exceeds 1,000 applicants.

Increased availability of funds for loans may increase competition for QS, thereby driving up QS values. This may further disadvantage coastal community residents who may not have the same financial stature or level of collateral with which to compete for loans. In 2000, the program committed all the funds for a total of 39 loans (K. Ott, NMFS pers. comm.) The state residency for each of these borrowers is listed in Table 3.48. Table 3.49 lists the 82 loans issued to Alaskans since 1998 by residence.

Table 3.48. North Pacific loan program loans awarded in 2000 by state.

Alaska:	23
Washington:	8
Oregon:	3
Idaho:	1
Colorado:	1
Georgia:	2
California	1

Commercial Fishing Revolving Loan Fund

The State has granted ten loans totaling \$911,375 for the purchase of halibut and sablefish QS out of nearly \$8.7 million in loans awarded in FY2000. Two loans, one of which was for halibut QS, were awarded to residents of two of the 37 coastal communities under consideration under Alternative 2, Issue 11.

Commercial Fishing & Agriculture Bank

Fifty-one loans totaling \$8,371,544 for the purchase of 3,795,128 halibut QS have been granted by CFAB since December 31, 1998 (D. Rogers, CFAB pers. comm.). Only three CFAB loans have been issued to residents of the 37 Gulf coastal communities under consideration for a set-aside. The total loan amount of those loans totaled \$300,000, less than 4% of total loan amounts.

Other Sources

Alaska Native Claims Settlement Act. Through the Alaska Native Claims Settlement Act, the Federal government provided 13 Alaska Native regional corporations with approximately \$1 billion. Five of these corporations have all or part of their geographic boundaries on the Gulf of Alaska. Those five are the Aleut Corporation, Chugach Corporation, Cook Inlet Region Corporation, Koniag Incorporated, and Sea Alaska Corporation. These corporations had \$492.4 million in revenues (FVOA pers. comm.).

Bureau of Indian Affairs. A loan guarantee program administered by the U.S. Bureau of Indian Affairs offers guarantees of 90 percent on commercial loans from banks to eligible Alaska Native tribes or ANCSA corporations. Interest rates are based on the prime rate plus 1.5 percent for the 90 percent guarantee (FVOA pers. comm.).

Table 3.49. Residence of 82 Alaska state residents have been approved for IFQ financing (1998-2000)

<u>Residence</u>	<u># Loans</u>
Akutan	1
Anchorage	2
Central	1
Cordova	5
Craig	2
Douglas	1
Eagle River	1
Elfin Cove	1
Gustavus	1
Haines	2
Homer	7
Hoonah	1
Juneau	5
Kake	1
Kasilof	1
Kenai	1
Ketchikan	4
Klawock	1
Kodiak	6
Nikolaevsk	1
Ninilchik	1
Pelican	1
Petersburg:	15
Port Alexander	1
Sitka	10
Soldotna	1
Valdez	3
Whittier	1
Wrangell	3
Yakutat	1